

An Official Publication of the United States Distance Learning Association

Volume 5 Number 1 2008



# DISTANCE LEARNING

... For Educators, Trainers, and Leaders

*In this  
issue the  
spotlight is on*

***The Iowa  
Communications  
Network***

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# Meeting the Shifting Perspective

## The Iowa Communications Network

**John Gillispie, Joseph Cassis,  
Tami Fujinaka, and Gail McMahon**

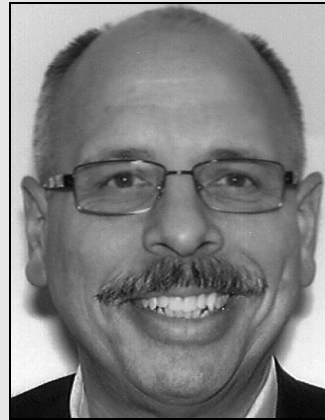
**T**he educational world operates in many dimensions. Population, learning expectations, resources, and technology all contribute to today's shifting perspectives on how to deliver curriculum to students. In 1989, when the Internet was unheard of and "global economy" was not in our regular vernacular, the state of Iowa was already starting a giant technology shift. With the creation of the Iowa Communications Network (ICN), our predominantly rural state was ahead

of its time by using fiber optic telecommunications to bring video distance learning opportunities across the miles to Iowa students.

Today, over 6,400 miles of fiber cable, 3,100 owned by the network and 3,300 leased, allows Iowans to access education, health, and government through the network's authorized users—secondary and postsecondary schools, libraries, hospitals, National Guard armories, state agencies, and federal offices (see Figure 1). Standard



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## IOWA COMMUNICATIONS NETWORK VIDEO CLASSROOMS

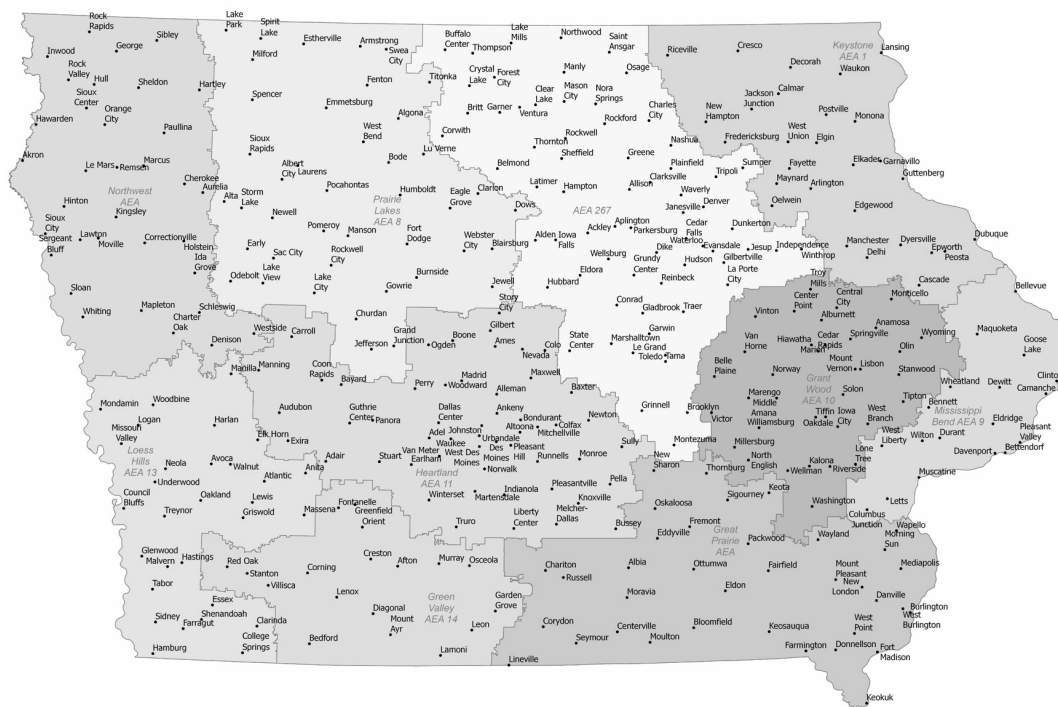


Figure 1. Almost 75% (518) of the classrooms are in the education system.



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ICN video classrooms are based on Asynchronous Transfer Mode (ATM) connectivity with Motion Picture Experts Group-2 (MPEG-2) video compression.

Those who had the bold vision to think outside brick-and-mortar met the ICN with open arms. Some who did not see the need, now have a new perspective, while those who had the vision, now need and want more; and the ICN is shifting its perspective to deliver.

### TIME SHIFT

Any time, anywhere—a unique concept just a few years ago—is now an expectation among much of society. Today's traditional students have grown up in the instantaneous world of technology, where time is based on how long it takes to upload or download information from the Internet, not how long it takes to travel somewhere.

A constant challenge facing the ICN throughout its young life has been the issue of school bell schedules. With over 350 school districts, and an almost equal number of differing bell schedules, the

need for a shift in perspective regarding time and education is ever increasing.

Bell schedules are often cited by school districts as an obstacle to using the ICN, but the fact remains that where there is a will, there is a way. Some Iowa K-12 administrators look past bell schedules and work together to bring classes to their students. For example, Brooklyn-Guernsey-Malcom (BGM) High School Principal Rick Radcliffe faced losing a Spanish teacher and another foreign language option for students. So, he created a model to entice the Spanish teacher to stay and, as word spread about BGM Spanish classes over the ICN, requests to participate came in from other districts. Conflicting bell schedules posed a challenge, but nothing insurmountable. One school even changed its schedule and calendar to match that of the BGM district. With flexibility and a shift in perspective, four school districts retained the possibilities for almost 200 Iowa students to meet foreign language requirements by using the ICN video services.

The ICN is not just video; the network also provides bandwidth to authorized users. A growing trend toward time-saving online and hybrid courses, a desire for



Figure 2. BGM HS Spanish instructor Nicki Maestre teaches to her students and others via a traditional MPEG-2 ICN video classroom.

more access to online curriculum content, and increased movement of content via Internet Protocol (IP) have all created a dramatic increase in the need for bandwidth.

Through a strong collaborative effort forged by the network and Iowa Public Television (affiliated with the Iowa Department of Education), pre-K-12 students, teachers, administrators, and school personnel benefit from distance learning opportunities delivered over the ICN. During the 2006-07 school year, more than 50,000 students and teachers came together “virtually” through *K-12 Connections*. This IPTV project, designed to provide curriculum-enhancing opportunities for students, educators, and school personnel, provided almost 7,000 hours of full-motion, interactive video learning sessions to Iowa students, teachers, or schools.

One university professor sees *K-12 Connections* as a way to educate and spark students’ interest in science and teaching in a field where demand is high. Iowa State University professor Dr. Larry Genalo is the host of the “Science Fun: What’s Hot and What’s Not” ICN sessions, which focus on the atomic structure of materials and the effects of changing these structures through heating and cooling. His ICN sessions are full of activity and lively demonstrations. Metal, glass, and rubber objects are melted, frozen, bent, broken, and shattered by using fire and liquid nitrogen. In addition to the demonstrations, Dr. Genalo has constant interaction with the students and explains real-world examples, such as the space shuttle Challenger and the Titanic, which bring home the lesson.

Current *K-12 Connections* sessions are scheduled via a reservation system, as are all ICN video sessions, which provides little time flexibility. With a shift in perspective, *K-12 Connections* is progressing into online streaming and more video rebroadcasts of popular ICN sessions, for easier access by teachers, students, and adminis-

trators, via Internet connectivity made possible through the ICN.

## PLACE SHIFT

The “anywhere” mentality of today’s distance learner is a shift from the centuries-old face-to-face delivery of classes. The ICN’s MPEG-2 infrastructure calls for video classrooms at most public school districts and certified public schools that were willing to purchase the classroom equipment, as well as community colleges, regent universities, and private colleges. Today, ICN video classrooms are within 15 miles of every Iowan.

The American mindset no longer accepts the excuse that if you live in rural Iowa you have to give up the opportunity for advanced classes or a field trip to the capital in exchange for valued rural culture. The ICN was built on the premise of equal access to educational opportunities for all Iowans—in 1994, one of the first classes shared was a high school Russian class. The mantra for many of today’s parents is, “If it’s there, I want it for my child.” If course content is available, a student should be able to access it, no matter where he or she lives. Parents and their children expect to be able to access curriculum like Chinese, Russian, statistics, and physics. Busy schedules, including academics, sports, jobs, and family activities underscore the need for nomadic learning.

However, the debate over virtual versus face-to-face classes still plays a part in distance education and for the ICN. Some educators, administrators, parents, and others believe that the most effective way to learn is with face-to-face communication between the student and the teacher. Even in today’s technological world, some still consider online classes, with electronic interaction via e-mails and chat rooms, to be less effective than face-to-face interaction. The ICN helps bridge the two factions. The traditional ICN video high school course, offers MPEG-2 broadcast



Figure 3. ILO physics instructor Terry Frisch demonstrates a concept to students over ICN from the Johnston High School video classroom, which is Voice over IP capable.

quality video, providing many of the elements that educators believe are missing in online courses. Students can access classes not available at their location, there is live interaction with an instructor, and the push-to-talk microphones are similar to having students raise their hands to ask a question. Students can ask questions and instantaneously receive an answer.

Online offerings have surpassed the traditional video classroom courses; however, the ICN video classroom remains an important tool for Iowa's small schools and communities. The ICN delivered more than 184,000 hours of video to K-12 districts and higher education institutions

around Iowa in fiscal year 2006-07. High school students continue to benefit academically from high school, college-credit, and Advanced Placement classes offered over the ICN, which was the original intent of the network. Foreign languages outweigh other topics in the number of session hours, coming in last year at just over 5,000. On the college level, traditional and nontraditional students also have opportunities to participate in videoconferencing classes. Some community college consortiums have as many as 13 high school locations with students joining via video in career-focused coursework. Northeast Iowa Community College had



Figure 4. Jim Christensen (right) of Northwest AEA and Sioux City Police Officer Chad Sheehan visit over the ICN with Wales Police Officer Lucy Bennet and Welsh students.

more than 200 students in the fall of 2007 taking classes through a health careers consortium. The University of Northern Iowa led the higher education usage last year and offers 15 programs over the ICN, including undergraduate and graduate programs, and one certificate program, to nontraditional students around the state, along with two online graduate programs.

Iowa Learning Online (ILO), an initiative of the Iowa Department of Education, offers several hybrid online/MPEG-2 videoconference classes, allowing the conflicting beliefs to come together while serving students. Location and accessibility factors are addressed, but the face-to-face factor remains. ILO offers classes to school districts for free or at a discounted rate. During the current school year, one ILO chemistry class has 31 students participat-

ing from South Page, Russell, Mormon Trail, Schaller-Crestland, Ankeny, Belmond-Klemme, and Waterloo School Districts. Students explore the central ideas of chemistry through online discussions, readings, online and kitchen labs, and problem-solving scenarios. Teachers use the ICN video classroom to discuss and view classroom demonstrations and laboratory experiments and to hold regular office hours. Students spend considerable time working on real-life problems in chemistry, and required regional labs are an integral part of the learning experience. Each student also has a student coach in his or her school. The districts participating in just this one chemistry class represent a diverse geographic and demographic populace of the state, further adding to the learning experience.

Today, we assume that students in a geographic area want to learn together. With the power of the Internet, geographic boundaries disappear and allow students to collaborate anywhere around the world. However, this is nothing new to the ICN, which has carried Iowa students to worlds outside their school corridors since 1995.

After his sixth grade class in the Galva Holstein School District (population just over 1,000) became the first elementary students to use the ICN in the fall of 1993, Jim Christiansen was hooked on using the network, and was determined to take his students to all corners of the world and then some. He created an interactive project linking middle-level students in schools across the state with NASA planetary exploration experts. Christensen then developed his Virtual Interaction Project Planning Model from which projects such as the AstroVIP emerged—interactive videoconferences conducted between Iowa students and astronauts at Johnson Space Center. He conducted the first videoconference between students and the crew of the International Space Station. Iowa students continue to connect to astronauts in flight and under water today.

During this time, Christensen also developed an international program linking students across the United States with students in the United Kingdom. To this day, oceans apart, enthusiastic third graders in two school communities regularly come together thanks to this project and ICN technology. Students in Sioux City, Iowa, and the country of Wales have created a tool for collaboration and international understanding by using the ICN. Their visits include topics such as holidays, sports, the cost of living, and the weather in Iowa. The Sioux City students even participated in a question and answer session with an American astronaut and Russian cosmonaut who were guests at the Welsh school.

Wales Halfway School Principal Colin Evans says the students play an integral

part in the success of the program, helping decide the content of the conference at least 3 months in advance, allowing plenty of time for practice. In 6 years, they have streamlined the international exchange to involve two yearly ICN videoconferencing sessions, an “e-pal” program, and report sharing.

Another video session over the ICN brought together 29 students and faculty from four community colleges in Florida, Wisconsin, Illinois, and Washington, as well as one in Ecuador, so they could meet before a “Transcultural Nursing” study-abroad program, sponsored by Community Colleges for International Development. Headquarters for CCID are at Kirkwood Community College, in Cedar Rapids, Iowa, which hosted the meeting.

Numerous other sessions have crossed borders and brought students of all ages together, such as the 2006 National High School Mock Trial championship team from Valley High School in West Des Moines. The team was honored by their school in a celebration with their peers over the ICN, while the team was still in Oklahoma. The championship team beat 43 competing schools at the national competition in Oklahoma.

The anywhere concept does not just apply to K-12 or higher education students working together in the name of distance learning. Professional development and training have been prevalent over the ICN, and the network’s role in the community has become even stronger. In telemedicine, the Midwest Rural Telemedicine Consortium (MRTC) is successful in educating health care professionals and specific patient groups across the ICN. The MRTC reaches out to hospital administrators, employees, patients, and the general public through accredited and nonaccredited programs and education classes, such as diabetes, pain management, and coping with cancer. The group reaches a wide audience, while saving time and mileage for all involved. The consortium has also



sponsored international educational opportunities, such as connecting a doctor in Des Moines with a dermatological society in the Philippines.

The state library system relies heavily on the ICN to educate librarians and the public. Some examples include local and city government representatives learning how to help the U.S. Census Bureau prepare for the 2010 census, Public Library Management 1 and 2 courses, required for public librarian certification, and satellite downlinks of teleconferences provided by the College of DuPage in suburban Chicago. The state library also relies on the network as the backbone of its Web sites providing Iowans access to a wide range of learning resources, including library catalogs, databases, census data, patent information, and consumer health information.

In Iowa's far northeast corner, the ICN video classroom at Waukon High School has become an integral part of the community. The school led the way in room usage in fiscal year 2007, providing additional learning opportunities for the community. For 6 to 7 hours a day, high school students and adult learners took college credit classes ranging from medical related to statistics to entrepreneurship and marketing. Younger children participated in educational, interactive sessions offered by IPTV and educational and community professionals received training without the high costs of travel. The room has been so successful for the school and community that district officials asked Northeast Iowa Community College to include an ICN classroom in their satellite campus being built across the street from the high school.

## **MENTAL SHIFT**

The days of students sitting in classrooms is rapidly changing. Student learning methods can be customized to their specific learning patterns with current technology advances. The adoption of new technologies by students is almost an

innate process, but administrators and instructors struggle to keep up the pace. The next generation of tools allows collaboration without the need to be a technical wizard. Video over IP, Wikis, chat boards, discussion groups, and social networking sites—all are tools in the public domain making a rapid crossover into the educational arena and making time and place even less important factors in the decision process students and teachers use to seek out learning. All of these tools require non-blocking bandwidth, something the ICN has had to do since its early days.

Observing the social patterns of the multithreading next generation learners promotes the viewpoint that collaboration using technology is a more natural process for them than any preceding generation. These tools, with their ease of use, make collaboration a natural for even the most technically challenged person, and creating a mental shift that can push aside the factors of time and place.

The call for collaboration resounds throughout Iowa. More schools are coming together to offer courses in a collaborative manner as teaching resources become an increasingly scarce commodity. In the case of the BGM School District, Principal Radcliff used the ICN as a way to provide a monetary incentive for the teacher and maintain an academic option for his students and those in four other districts. More districts are looking at collaborative class sharing with other districts for fall 2008, as they grapple with the challenges of high fuel prices, teacher shortages, and meeting students' needs in rigor and standards.

For the ICN, collaboration in creating formats to deliver content created by partners that are valuable to students has been a priority over the last 4 years. A partnership with IPTV ensures the *K-12 Connections* virtual field trip program continues to operate and provides valuable professional development opportunities for all levels of school personnel. The innovation shown

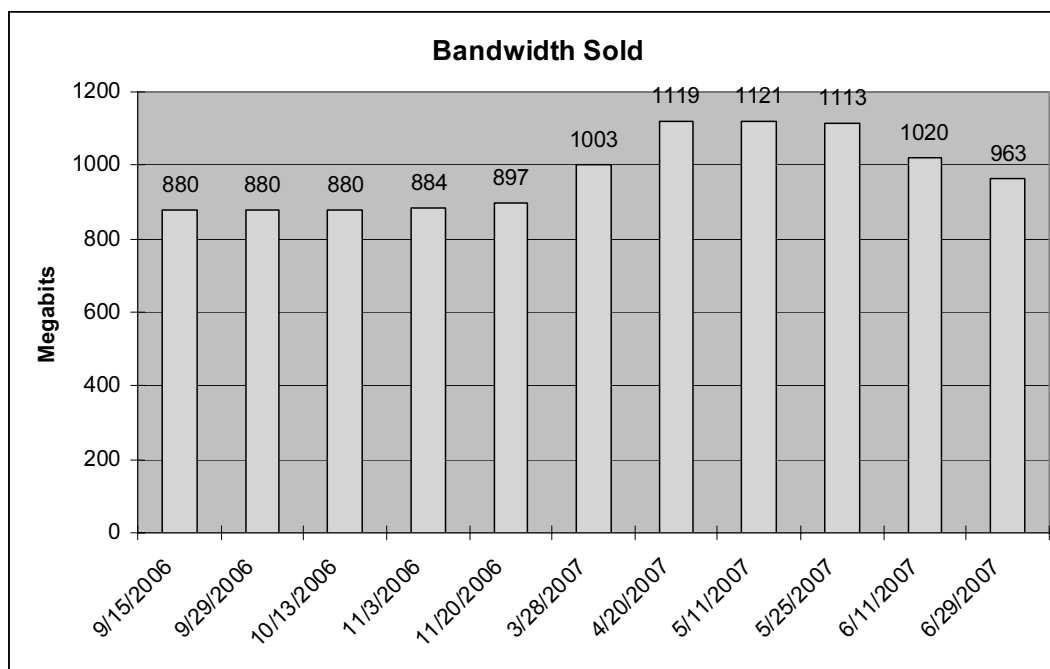


Figure 5. Educational entities use 74% of the Internet provided by the ICN. Downward trend reflects K-12 school year ending for the summer.

by the partnership has resulted in reaching large-scale, diverse audiences not reached before, such as school nurses and school food service professionals.

Iowa Learning Online continues to gather momentum, but increasingly uses Video over IP and Internet-based course software to deliver on the promise of distance learning. These initiatives use a mixture of technologies to deliver their content, and the ICN remains an essential piece of the whole solution delivered.

The shift in the expectations of students, parents, and the next generation of teachers is not happening; it has already happened. A mental shift among administrators and educators is slowly, but surely, kicking into gear. Time, space, soaring fuel costs, and financial resources have schools rethinking access to technology, and the rapidly evolving marketplace brings resource constraints to the forefront. Many Iowa school buildings do not have ICN video classrooms,

cannot afford a dedicated classroom, some of the rooms are already fully booked, and some have rooms being used for other purposes.

For the ICN, the shift from the video classroom to streaming content is taking place rapidly. The growth of Internet services has happened exponentially in a very short period. This shift is putting pressure on the ICN to adapt and adopt with its own mental shift. While the traditional video classroom usage has remained about the same over the last few years, the demand by schools for big Internet “pipes” has increased dramatically (see Figure 5).

IP has dynamically changed the way people interact in education, business, social networking, safety, and in health. Videoconferencing is one of those capabilities that is significantly changing through IP; providing a greater number of people access to communicate interactively as an alternative to face-to-face. ICN recognizes

the need for a shift in delivery to provide schools, and other authorized users, greater access to videoconference—not as a replacement of its current video classroom MPEG-2 service, but one that complements this service and, in the end, benefits students and educators by filling the voids felt in technology, budgets, and space.

In the early 1990s and before the commercialization of Internet, over 750 classrooms truly gave ICN the “WOW factor.” Videoconferences using the legacy ICN video classrooms remain hallmark with broadcast-quality connections and reliability consistently averaging five 9s or higher. The quality of Video over IP does not equate to broadcast MPEG-2; however, users are adapting to their expectations over convenience, similar to cell phones versus landline phones. With the sleek, multipurpose, credit card-sized phones of today, do we still expect to have a call drop or to hit a dead spot, once in a while? Absolutely. Nevertheless, the benefits of convenience, access, and mobility outweigh those occasional frustrations with quality, lack of cell towers, and multitudes of plans. So much so, that many people have dropped their landlines completely. Such is the conundrum of tradition (ICN MPEG-2 video) versus advancement (Video over IP).

Students at Edgewood-Colesburg Elementary School can not learn from IPTV’s *K-12 Connections* programs. They are 12 miles from the ICN video classroom at Edgewood-Colesburg High School—same district, different town, which is often the case in Iowa. Participation would mean transporting young children to the high school to participate. With Video over IP, the mobility and access of the equipment means a teacher can use it anywhere there is an Internet connection via a laptop or mobile PC. There is no dependency on a specific classroom.

A high school in northwest Iowa has an ICN video classroom, that is a “receive-

only” site. However, they want to originate sessions, too, so they can have their teachers teach to other schools, possibly boosting a course or department struggling to stay afloat due to low enrollment. The costs of upgrading their current ICN classroom could significantly outweigh the cost of adding a Video over IP system in the building. Mobility and access come in to play again, as the equipment can move throughout the building, allowing more teachers the ability to use it for teaching curriculum enhancement or class sharing.

Connecting sites by using Video over IP takes a well-coordinated effort, since IP addresses and availability of participants need to be known. Congestion of Internet traffic may further impact the quality and sound of the videoconference. Various forms of equipment among schools might cause problems with the connections, and local Internet service providers may have different levels of quality of service that might affect the sessions. All that being noted, the fact remains that Video over IP addresses the void that schools face, given their constraints in access to technology, budgets, and space resources, while reflecting the world’s shift in technological expectations.

## SHIFTING GEARS

A high school principal receives a phone call from a seventh grader’s parent, wanting to know if the student will have access to Chinese in 5 years when he reaches high school. A college freshman laments to her former high school counselor about the lack of access to advanced science and math classes, which would have better prepared her for college. Teachers request to teach in their school’s ICN video classroom because it has more technology available to them than their regular classroom ... including something as simple as a CD or DVD player. New teachers yearn for more accessibility to the latest and greatest technology.

Technology continues to whittle away at the arguments of time and place in the Iowa classroom, where students and upcoming teachers have already shifted into high speed and are cruising in overdrive. The ICN is shifting, too, bringing these new technologies to current and future generations, with a focus on the new expectations and standards of today's

educational world—mobility, access, and collaboration.

Just as technology has supported the increasing globalization of business, the ICN remains, and will continue to play, an integral part of the shifting solutions delivered for the globalization of Iowa education—transporting knowledge, instead of students.

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# Facilitating Adoption of Technology in Higher Education

**Dustin L. Annan**

In recent decades, higher education institutions have seen an influx of advances in technology. Advances in personal computing, classroom technologies, and the Internet have made inroads into the teaching, research, and service aspects of higher education. In the past few years, colleges and universities have invested heavily in infrastructure to support the adoption and use of technology (Green, 1999). Despite the investments on technology and technology support in higher education, many argue that tech-

nology is not being effectively integrated into teaching and learning (Geoghegan, 1994; Green, 1999). According to a report on technology use on U.S. college campuses, one of the most important issues facing higher education is assisting faculty with "integrating information technology into instruction" (Green, 2007). Computing technology may have increased efficiencies, but examples of instructional technologies that have truly "penetrated the curriculum," that aid in "illustration and explanation," or as tools for "analysis and synthesis" of information, are few and far between (Geoghegan, 1994).

Oftentimes, information and educational technology professionals are called on to facilitate faculty use of technology. Technology professionals undoubtedly must work to address the many barriers that stand in the way of effective use by faculty of technology for teaching. This article will outline the most commonly cited barriers to technology use by faculty in higher education, present Rogers' diffusion of innovations model as a framework for understanding technology adoption, and provide some practical tips for encouraging use of technology by faculty. While this article focuses on educational technology in general, the barriers, diffusion model, and tips discussed in this article are relevant to any application of educational technology, including distance education.



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Much research has been conducted to examine why technology has not been adopted more fully by faculty in higher education. This research has highlighted many barriers to adoption of technology. One barrier is the lack of a technology infrastructure (Geoghegan, 1994). A technology infrastructure includes the hardware and software, computer peripherals, networks, classrooms, and facilities that must be available to adequately support the use of a teaching technology. To be adopted for use by faculty, technology must be available, pervasive, nonintrusive, easy to use, and reliable (Brill & Galloway, 2007). The adoption, utilization, and subsequent integration of information technologies by faculty is contingent on providing the necessary, easy to use technology infrastructure.

Another barrier is the lack of support for technology by administrators. According to Green and Gilbert (1995), technology infrastructure can be seen as a "black hole" for money that is an easy target for budget cuts. The use(s) of computer-based technologies and the significant financial requirements associated with hardware, software, and infrastructure development continue to be high-stakes considerations for institutions of higher education. Consequently, the importance of technology to the educational mission of many institutions is either overlooked or is not communicated to faculty.

A third barrier is the pedagogical issues that arise when technology is adopted and used for teaching. Adopting a technology may require a change in the way faculty have always approached teaching. It may require a revision of curricula or resources, the use of new teaching strategies or activities, or the alteration of some pedagogical assumptions regarding the roles of the teacher and the learner (Geoghegan, 1994).

Finally, a fourth barrier to effective technology use is the myriad of other interests and responsibilities that faculty members have. According to Zhao and Frank (2003),

competing goals and interests play a large part in faculty adoption of technology. Zhao and Frank (2003) state that faculty adoption of technology is like a complex ecosystem of competing species and that faculty "rationally calculate the costs and benefits" of adopting technology (p. 831). In addition to teaching, faculty members in higher education may be required to research, publish, administrate programs of study or departments, participate on college or campus committees, and participate in public service projects and outreach. Faculty members may just not have the time or interest to learn about new teaching technologies.

These barriers to effectively using technology for teaching and learning can be daunting. So, how do information and educational technology professionals effectively support and encourage the adoption and use of technology in spite of these barriers? Rogers' (2003) diffusion of innovations theory provides a conceptual framework for understanding technology adoption. There are several key components to Rogers' theory that are particularly relevant to supporting faculty in the adoption and use of technology.

According to Rogers (2003), the adoption of an innovation occurs in five stages. These stages are knowledge, persuasion, decision, implementation, and confirmation. In the knowledge stage, an individual is first exposed to the innovation and becomes aware that it exists. During this stage, an individual gathers information about the innovation, learns how it works, and becomes aware of what needs it addresses. During the persuasion stage, an individual forms an opinion and develops an attitude toward an innovation. At this stage, an individual wants to know what are the advantages and disadvantages of the innovation. In forming an opinion of the innovation, an individual will rely on interpersonal communication channels for information. For example, faculty members might rely on the opinions of other trusted

faculty members in forming an attitude towards a particular technology tool. During the decision stage, an individual chooses to reject or adopt an innovation. During this stage, an individual will need to try out the innovation on their own or to observe the innovation in trial. During the implementation stage, an individual puts the innovation to use. Finally, in the confirmation stage, an individual seeks to confirm his or her choice to reject or adopt the innovation.

Another important component of Rogers' diffusion of innovations theory is his categories of adopters. Rogers states that individuals can be categorized according to their innovativeness. Rogers categorizes individuals by how likely they are to adopt an innovation and at what point they are likely to adopt it. Rogers' categories include innovators, early adopters, early majority, late majority, and laggards.

Innovators are the first individuals to adopt an innovation. These individuals tend to be venturesome and interested in new ideas. Early majority are the next group to adopt an innovation. Early adopters are an important part of the adoption process because they are the opinion leaders of their group. The next group to adopt is the early majority. The early majority's location between the very early and the relatively late make them an important link in the diffusion process as they help to connect members within the system. After the early majority comes the late majority. These individuals tend to be skeptical of an innovation and wait to adopt until most everyone else has already done so. Finally, laggards are the last group to adopt an innovation. Laggards tend to be traditional and suspicious of innovations and change altogether.

Two other important concepts of Rogers' theory include change agents and communication channels. Change agents influence others in their decision to adopt an innovation. Change agents help develop a need for change, establish infor-

mation exchange relationships, diagnose problems, create in users an intent to change, translate an intent to change into action, stabilize adoption, and prevent discontinuance, and achieve terminal relationships with users so that they become self-reliant. Early adopters generally act as change agents within a group (Rogers, 2003). Information and instructional technologists can also be change agents.

Communication channels are also an important component in the adoption process. A communication channel is the "means by which messages get from one individual to another" (Rogers, 2003, p. 18). Individuals often seek out information through interpersonal channels when trying to determine the advantages and disadvantages of an innovation. According to Rogers, most individuals evaluate an innovation based on the subjective evaluations and opinions of near peers rather than on the evidence of scientific research conducted by experts.

Rogers' diffusion of innovation's theory provides a useful framework from which to design, promote, and deliver support for faculty. Information and educational technologists should facilitate technology adoption by identifying opinion leaders, leveraging communication channels, and recognizing and addressing the individual needs and expectations of faculty members. There are many practical ways in which technology professionals can encourage faculty use and adoption of technology by building on Rogers' model.

Zvacek (2001) recommends that technology professionals seeking to encourage faculty use of technological innovations should interact and be involved constantly with faculty and should work within the "regular" forces of the institution. For example, Zvacek states that technology professionals should "reconsider any activity that receives little support from faculty opinion leaders" (p. 42). Technology support professionals should instead work with opinion leaders to build credibility



and inspire confidence as a way to encourage widespread use of technology by mainstream faculty.

Additionally, it is important to make connections between technology and current practices and values of the institution. For example, technology professionals should discuss research findings supporting instructional uses of the technology, present examples from other institutions where strategies have been used, and discuss how these strategies can complement values of the groups (Zvacek, 2001). According to Brand (1997), it is also important to link technology and the educational objectives of the institution. Technology support professionals should encourage faculty to think first how the technology fits into their curriculum. Faculty must be convinced of the relevance of the technology to what they do in the classroom if they are to be convinced to change their current practices (Brand, 1997). Consequently, it is important to anticipate the classroom change that will accompany adoption of the technology.

Technology professionals should also be sure to stay aware of communication channels. It is the role of the technology professional to connect faculty with each other and to shine a spotlight on innovative and effective uses of technology. For example, technology professionals should link faculty members to each other who are working on similar technology-related projects (Zvacek, 2001). They should recognize specific faculty members when they've done something innovative with technology, perhaps by publishing this recognition in a department, college, or campuswide newsletter. Faculty advisory boards or special interest groups designed to give faculty a voice in technology planning or support faculty use of technology area also helpful (Zvacek, 2001). Technology professionals should foster the support from administration for innovative uses of technology by faculty. Administrators must be sure to

communicate a vision for educational technology and do more than just pay lip service to the importance technology has in the educational experience provided by the institution (Brand, 1997).


Because some faculty members may be less inclined than others to adopt a technology, it is also important to tailor support and professional development opportunities to the needs and expectations of individual faculty members. According to Brand (1997), professional development is most effective when it offers flexibility). For example, offer a series of workshops that encourage "small bites" of technology integration for faculty who don't have the time to attend (Zvacek, 2001). Follow up with individuals one-on-one after large group activities to ensure that all questions are answered. Provide training and support at different times to meet the varying schedules of faculty, and provide different kinds of learning opportunities.

If technology is to be used effectively for teaching and learning, technology professional must be cognizant of the barriers that inhibit its adoption. Rogers' diffusion of innovations model provides a conceptual framework for understanding the adoption process and the elements, such as the individual innovativeness, change agents, and communication channels that can be used to facilitate technology adoption.

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# Career Readiness Credential

## Assessing and Improving Workforce Skills to Meet the Needs of Employers in the Information Age

**Terry Ausman**

### **WORKFORCE CHALLENGES IN AMERICA**

#### **THE CHANGING WORKFORCE**

**I**n the early 1900s, America represented an agrarian society. Basic instruction was offered in reading, writing, and arithmetic, primarily to White children. There were some private, church-

sponsored colleges training clergy and politicians, but most available jobs were usually agricultural or basic manufacturing. Throughout the twentieth century there was continuous expansion of educational opportunities to include junior and senior high schools, community colleges, teachers colleges, and research universities. Students were completing baccalaureate degrees as a measure of success, and jobs were developing in middle management. Today we are faced with the Information Age. Jobs today are rapidly changing, creating a requirement for workers who can do the job today while learning a new job for tomorrow. There are increased learning opportunities today through the use of technology. Education and training is now available online, delivered to anyone, on demand. Workers now have access to continuous and lifelong development in their jobs. In the popular book *The World is Flat*, Friedman (2005) lists critical differences between the twentieth century workforce and the twenty-first century workforce. In the twentieth century, he says, a high school diploma guaranteed a level of trainability for most jobs. In the twenty-first century, however, Friedman recognizes that skills credentials overshadow degrees and diplomas in importance. Employers in the twentieth century were seen on the



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sidelines complaining about education. In our economy today employers are working collaboratively with educators and parents to help prepare young people to face the challenges. In 1954, unskilled jobs made up 60% of the job market, with skilled jobs filling 20% and professional jobs made up the other 20%. By 2004, the mix had shifted. Although 20% of the workforce is still made up of professionals in the 2004 count, the skilled jobs represent 68% of the workforce and unskilled jobs represent only 12% (Bolin, 2005).

### **A PROBLEM FOR JOB SEEKERS**

Earning a wage sufficient to support a family in America is a growing challenge. According to ACT research, employers are willing to pay higher salaries for higher skill levels. Occupations that require level 3 skills, sufficient for a bronze credential as explained later, pay beginning salaries of about \$16,000. Occupations that require level 7 skills, at the high end of the WorkKeys measurement scale for nonprofessional workers, typically pay beginning salaries of about \$30,000 (Sawyer, 2004). Sawyer, an ACT researcher, says "While education is worthwhile for its own sake, it also has a dollar payoff in the future" (2004).

### **A PROBLEM FOR EMPLOYERS**

American jobs are being increasingly moved offshore, where employers can find less expensive labor. Keeping jobs in America requires that we upgrade and our workforce and demonstrate the value of local employees. Hyslop (2006) says "Today's economic environment requires highly skilled and adaptable workers who are prepared for the changing and flattening global economy" (p. 37). It isn't enough to know how to do a job, but employers are searching for people who can learn new jobs as requirements change. Producing and maintaining a prepared workforce is an ongoing challenge within an era of

increased mobility of goods, services, labor, technology, and capital through the world (McLester & McIntire, 2006). Hiring trainable employees isn't easy. Bolin, executive director of the Career Readiness Consortium, works to coordinate the efforts of multiple states as they address this problem. She recognizes that hiring for entry-level positions is more difficult because the job seekers have little work history, a brief resume, and educational credentials such as a high school diploma or a 2- or 4-year degree. Experts predict that by 2010 over 80% of jobs will require training beyond high school and yet these school credentials may not give a clear indication of the skills that the applicant possesses. They do not tell us whether a person is trainable in a work environment that will continue to change (Bolin 2005). Employers need a way to communicate effectively with educators and training organizations to tell them what skills they need. Wisconsin led the nation in welfare reform in the 1990s. A key improvement over the course of their multiyear program was helping businesses to move from supply side to demand-side hiring. Employers had accepted whatever came from the training programs at first but found greater success when they were able to define what they needed first instead of just taking what they could get (Nitscheke, 2001).

### **A PROBLEM FOR EDUCATORS**

Educators across the country are working to identify the skills students need to succeed in college and in the workforce. Results from a study done by ACT in 2006 provide empirical evidence that "whether planning to enter college or workforce training programs after graduating, high school students need to be educated to a comparable level of readiness in reading and mathematics" (p. 1). The study identified the level of skill in these subjects which a student would need to be ready for entry-level jobs that require less than a

bachelor's degree and pay a wage sufficient to support a family. Student performance was compared on ACT tests measuring workforce readiness and ACT tests measuring college readiness. The results showed that students following either course need a rigorous core preparatory course program (ACT, 2006). But how do employers communicate specific readiness qualities to educators? How do educators know if they are meeting the needs of today's workforce? Klein, president and chief executive officer of Corporate Voices for Working Families, addressed these questions when talking about Workforce Readiness Report Card, released in 2006. Klein says that employers must be more active defining skills they need from their new employees (McLester & McIntire, 2006).

## **PROPOSED SOLUTION: A CAREER READINESS CREDENTIAL**

### **A PORTABLE LITERACY CREDENTIAL HELPS JOB SEEKERS AND EMPLOYERS CONNECT**

The Center for Workforce Preparation reports that the 1991 National Literacy Act tells us that a literate American is able to "read, write, and speak English and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve (his) goals, and to develop (his) knowledge and potential" (2005, p. 6). In 1999, Kentucky led the country in developing a collaborative alignment between multiple agencies across the state to implement the Kentucky Employability Certificate (KEC). The Chamber of Commerce, Kentucky Community and Technical College System, Kentucky Adult Education, Kentucky Workforce Investment Board, and the Commonwealth Department for Workforce Development (now the Kentucky Education Cabinet)

were leaders in establishing the KEC, using the WorkKeys System as the base. By January 2005 the KCTCS was a Bellwether Award finalist for the KEC, and the KEC was endorsed by 10 state agencies (The Career Readiness Certificate Consortium, n.d.):

"What we're trying to do is provide Kentucky—the workforce, students, and employers—with a portable credential which documents transferable skills," said KCTCS Chancellor Keith W. Bird. "We're trying to build a workforce and increase their skills, and to do that we've got to find a way to marry industry-recognized credentials to the curricula of our technical and community colleges and to provide a common language. And the WorkKeys system meets all those requirements." (ACT, Inc., n.d.)

## **A CREDENTIAL BUILT ON A NATIONAL CRITERION-BASED WORKFORCE ASSESSMENT SYSTEM**

The programs are built on the ACT WorkKeys system which includes job profiles to help employers define their needs, nationally standardized tests to help job seekers measure their skills, and cross-walked curriculum to help people fill skill gaps in basic foundational areas when they are identified. Louisiana explains their decision to use the WorkKeys system:

ACT, Inc., the makers of the ACT college entrance exam, designed the WorkKeys Employment system as a comprehensive system for measuring, communication, and improving the common skills required for success in nearly every skilled job and career in America. It allows these skills to be quantitatively assessed in both individuals and in actual employment positions or job descriptions. Therefore, WorkKeys allows for comparison of the skills required by a job with the skills possessed by the job seeker. (Louisiana WorkReady!, 2005, p. 11)

## **A CREDENTIAL WITH AN EXPANDING PRESENCE**

In 2003, Virginia, Kentucky, North Carolina, Maryland, Tennessee, West Virginia, and Washington, DC worked together, sharing their experiences, to develop a similar credential which would tell employers about the basic skills of job seekers. Leaders from these states represented interest from Workforce Development, Department of Labor, Department of Education, and others to define the credential based on criterion reference workplace literacy skills (Bolin, 2005). There are now 14 states issuing a career readiness credential, 17 that are in the process, and another 14 that are interested. As of July 20, 2007, more than 100,000 certificates have been issued nationwide (<http://www.crcconsortium.org/state-news.htm>) in what appears to be a groundswell of activity around the credential, ACT announced the ACT National Career Readiness Certificate in September of 2006.

## **A CREDENTIAL OFFERING MORE THAN A CERTIFICATE**

The system calls for cooperation between employers, educators, and job seekers. Job profiling offers a concrete way for organizations to analyze the skills required for specific jobs and to describe those needs to both educators and job seekers. The three foundational assessments: Reading for Information, Locating Information, and Applied Mathematics are the basis for more than 85% of the jobs listed in the occupational data base of over 13,000 jobs profiled so far (Bolin, 2005). When scores from the three foundational assessments are compared to the skill levels required for a job, organizations can make more reliable hiring and training decisions. The assessments offer an objective measure of job seeker skills, with identified skill levels that mean the same everywhere, unlike credentials from local schools. The use of WorkKeys assessments

will meet the guidelines set forth in professional standards such as the *Uniform Guidelines on Employee Selection Procedures* adopted by the Equal Employment Opportunity commission (EEOC) and other federal agencies.

## **A CREDENTIAL THAT IS EMPLOYER-TESTED AND APPROVED**

A career readiness program is helpful for a job seeker if it is valued by employers. It isn't only for pre-employed workers, but can also help reduce turnover and improve production for incumbent workers. Employers will embrace the concept only if it works, meaning it saves money on the bottom line. Owensboro Medical Systems in Owensboro, Kentucky is so confident that the system would work that they actually pay their current employees to participate. The hospital put in a new training and assessment lab with 12 computers to allow 24-hour access for their employees. They experienced a 32% reduction in turnover, a fair system for promotion, and a renewed focus on education (ACT, Inc., 2007b).

## **A STATEWIDE COLLABORATION: THE FLORIDA WORK READY PROGRAM**

In 2007, the state of Florida created statute 1004.99 to fund the new Florida Ready to Work Credential to enhance the workplace skills of Florida's students to better prepare them for successful employment in specific occupations. (The Florida Senate, n.d., para. 1)

## **BENCHMARKING HELPS DEFINE THE JOB SKILLS REQUIRED**

The new law in Florida provides funding for job profiler training across the state. The WorkKeys Job Profiling Training program teaches individuals how to conduct the procedure used to determine the skills

and skill levels necessary for job performance. After 6 weeks of blended distance education, profiler trainees meet together for 4 days of onsite training to complete their program. Once a job profiler has successfully completed training they are authorized to work with employers anywhere in the country to help develop specific profiles for local jobs. So far, over 100 job profiles have been provided at no charge to employers in Florida. The process for completing a job profile may take up to a week at the job site for the profiler and personnel from the company.

#### **STEP 1: CREATING AN INITIAL TASK LIST**

The profiler travels to the job site to gather background information about the job and to tour the job site. Using SkillPro, ACT's proprietary software, the profiler develops an initial list of the tasks most relevant to the job.

#### **STEP 2: TASK ANALYSIS**

The profiler meets with subject matter experts (SMEs)—incumbent workers or supervisors of the job being studied—who review and revise the list of tasks, adding, deleting, consolidating, or changing the wording of each task to make sure that the list accurately represents the job as it is performed in their company. Then the SMEs rate each task according to two dimensions: importance and relative time spent. The data are used to produce a criticality rating for each task. The SMEs review this revised task list and make any necessary changes. The resulting final task list establishes which tasks are the most critical to performing the job.

#### **STEP 3: SKILL ANALYSIS**

Profilers present detailed descriptions of each of the WorkKeys skills to the SMEs. These descriptions include examples of problems or situations employees must deal with at each level. The SMEs decide, as a group, which WorkKeys skills are rele-

vant to the job and which skill levels are necessary for entry into the job and effective performance of the job.

#### **STEP 4: DOCUMENTATION**

The profiler documents the results in a customized Job Profile Report containing a list of the tasks most critical to performance of the job and information on the WorkKeys skills and skill levels required for entry into the job and effective performance of the job. This report establishes the link between the tasks of the job and the WorkKeys skills.

### **ASSESSMENTS OFFERED IN PROCTORED ENVIRONMENTS**

ACT has profiled more than 14,000 individual jobs across the country to determine the skills and skill levels needed to succeed in them. Three skills are highly important to most jobs. Reading for information helps measure the ability to comprehend work related reading materials such as memos and policy manuals. The second test, applied mathematics, checks to see if a person is able to apply mathematical reasoning to work-related problems. This is not a test of higher-level mathematics skills like calculus, but rather a test to measure how well a person can apply basic mathematics skills to real-world problems like knowing how much to charge for an item when it is discounted by ten percent and you still need to charge tax. The third test required for a credential (they may be taken in any order) is locating information. Employees often need to read diagrams, floor plans, graphs, charts, and forms. Skills of information retrieval and problem solving—measured by these tests—are highly relevant in the information age.

Florida Ready to Work allows for assessments to be delivered in secure proctored settings at public middle and high schools, community colleges, technical centers, one-stop career centers, vocational rehabilitation centers, and Department of Juvenile



Justice educational facilities. A small stipend is offered to nonprofit assessment centers, and assessments are paid for through funds managed by the Department of Education across the entire state. The Florida Ready to Work program is designed to be Internet-based, including both assessments and training, but for certain groups, such as the incarcerated population, paper-and-pencil versions of the assessment and the training materials are available.

### **FOUNDATIONAL SKILL TRAINING PROVIDED AT NO CHARGE TO PARTICIPANTS**

Online training is available to any resident in the state to improve foundational skills. The state has contracted with Worldwide Interactive Network (WIN) to provide contextualized training online. WIN is one of only two courseware providers in the nation providing basic workplace skills training, based specifically on the ACT WorkKeys system. The WIN courseware is reviewed and approved by ACT as aligned with the WorkKeys Targets for Instruction. The software features a text-to-speech-component for ease of use, and is available with full Spanish language text translation on screen. The software is designed by levels, consistent with the WorkKeys skill levels, and offers pretests, instructional materials, and posttests at each proficiency level and in each skill area required for the Florida Ready to Work credential.

### **A CREDENTIAL AVAILABLE AT THREE LEVELS**

A credential will be presented to each person who successfully completes the three WorkKeys assessments: Reading for information, applied mathematics and locating information. For those scoring a 3 or better on all assessments, a bronze credential will be awarded. A bronze credential will allow a person to qualify for nearly

35% of the jobs from among the 14,000 jobs that have been profiled. A silver level credential will be awarded to all participants scoring 4 or higher on all assessments, which would qualify an individual for 65% of the jobs from the database. The gold level credential is awarded only to those individuals who have scored at least a level 5 in each of the three core areas and signifies that the individual has the necessary skills for 90% of the jobs in the database.

### **FLORIDA READY TO WORK: A MODEL FOR SUCCESS**


The Florida Work Ready program offers an exemplary vision for improving America's workforce. Employers can define the skills they are looking for, educators can help workers acquire the skills employers need, workers can document their own employability skills, and America can continue to lead the world in productivity.

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ONLINE TRAINING IS AVAILABLE TO ANY RESIDENT IN THE STATE TO IMPROVE FOUNDATIONAL SKILLS. THE STATE HAS CONTRACTED WITH WORLDWIDE INTERACTIVE NETWORK (WIN) TO PROVIDE CONTEXTUALIZED TRAINING ONLINE.



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# A Historical Perspective and Look Forward at the e-Learning Industry

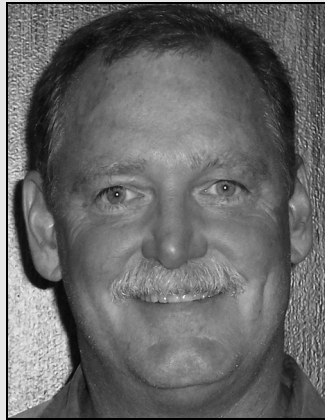
**Stephen Gatlin**

E-learning is one of the fastest growing fields, and it has been a dynamic process that has dramatically changed traditional teaching by eliminating many challenges. The evolution of the Internet has brought simplicity to education providers by creating a virtual learning environment that allows us to standardize quality and implement superior training methodologies—all while reaching a world of students simultaneously. With the development of e-learning, education is now more convenient

than ever, leaving countless online education opportunities for the future.

When I started in higher education, I provided career training to adults in a classroom setting as the Internet had not yet been adopted as a learning platform. There are special challenges unique to providing education through brick-and-mortar schools that have been eliminated by the development of the Internet. The logistics, specifically finding and reserving a location, hiring good instructors, and negotiating facility costs all translated to wasted time and lower profit margins due to duplication of efforts. Another challenge was that the target audience for adult career training is part of a social network that finds the ability to meet in traditional classrooms at specific times difficult if not impossible. This demographic might include stay-at-home mothers who want to get back into the workforce, homebound job-seekers with disabilities, or working professionals who want to make a career switch but can't find the time due to their current positions. In the early 1990s, the Internet presented itself as an opportunity to reach these groups with the career training they needed, at the time and place of their own choosing.

It was very evident to me that I could eliminate time-consuming and costly duplication of efforts while eliminating the variance in the quality of instruction if I made the transition to the Internet. In



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1995, I took our travel agent training program that was being taught in colleges and universities and developed it for online distribution. The course became successful due to its quality and simplicity, and it made me aware of the countless advantages of providing education online. E-learning made a student's home his or her personal classroom, providing state-of-the-art curriculum, the necessary course materials, and the best professional instructors at the touch of a button. Through Web-based delivery, all students receive the same information of the same quality across the globe, and there is no difference in teaching styles, as is the case when hiring local faculty for classroom education. In this way, distance education allows us to provide the best instructors to all students worldwide, ensuring that all parts of the curriculum are covered with the same emphasis and value. Before distance learning, students in rural education districts were often at a great disadvantage when it came to subjects being offered because smaller colleges don't always have the resources to attract teachers who are in high demand. Now, instead of having multiple instructors with varying quality, all students get a high standard of instruction no matter their location. As this educational equality is possible through general distance learning, there is a key advantage offered exclusively by e-learning: the student-mentor relationship. With e-learning, mentors can interact with students via e-mail, live chat, and discussion boards—something that is essential to a student's grasp of course information, which had been a missing component of correspondence learning.

It's safe to say that much of the world's population is comfortable learning online, and this is made increasingly evident each year as more and more adults are completing their education on the Internet. The need for effective and quality programs is not only being noticed in higher educational institutions but in corporate training

departments as well, and we will see e-learning solutions more and more for MBA and doctorate-level degrees. As an early adopter and industry old-timer, I saw a need to have a one-stop solution for online career training and have partnered my company with content providers, corporations, governments, and colleges and universities worldwide to provide options for adults to improve their education and career development skills. We created TheeLearningCenter.com, a worldwide initiative to provide the largest and most comprehensive collection of online continuing education programs, where students in Naples, Los Angeles or Beijing can begin learning with a few clicks of a mouse. With over 7,000 courses from many of the world's top authors and companies, The eLearning Center has become, in 2 short years, the largest single marketplace for online courses. It has concentrated on continuing education in fields as diverse as finance, healthcare, and automotive repair with course prices as low as \$12.00.

Yet, there is so much more to be achieved with e-learning, and the tools to provide a state-of-the-art education are available for us. Soon, the entire learning spectrum will be revolutionized, and e-learning will be available for every type of education, from the prekindergarten level through grade school and MBA degree levels, even making it possible to obtain a doctorate through online education. On the international level, the industry will continue as practitioners expand their worldwide efforts. Advanced countries such as the United States with greater income and Internet progression will see the most e-learning growth because of the acceptance of its structure. This is the single greatest factor today in the sales and distribution of content to adult populations. As the individuals responsible for driving the industry to new heights, we must keep improving on our e-learning products and concepts, as they are wide and varying, and students now look online

for the support, convenience, and the most cutting-edge learning content available to improve every aspect of their lives from personal to professional skills.

Innovative and emerging communication technologies have brought pivotal changes to the educational landscape, transforming both the depth and range of learning in the past decade. The adoption

of e-learning is most advanced in the United States, Europe, and Australia, but is growing in all parts of the world, allowing great development in the higher education and corporate development sectors. Our industry is an indispensable resource for individuals to access education on demand, and it will continue to grow in the future.

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# Videoconferencing

## What Teachers Need to Know

**Jennifer French**

### INTRODUCTION

**I**nteractive videoconferencing, IVC, a form of two-way telecommunications, has been available and used in education for more than 20 years (Moore, 2004). As high-speed bandwidth has become more readily available to K-12 school systems, and the cost of videoconferencing has dropped, many schools have invested in videoconferencing equipment. Unfortunately, similar to the implementation of other technologies, the educational uses of videoconferencing are being considered only after the purchases have been made. Videoconferencing can be used to deliver synchronous courses at a distance or to

supplement course content and student understanding through short connections with other institutions.

School districts interested in implementing IVC must research both the technical aspects and pedagogical applications prior to implementing this technology. Videoconferencing is a way of communicating, at a distance, for the purpose of exchanging information. This information sharing is done in a real-time, synchronous format using both video and audio. Information may be presented from one site to another or across multiple sites, or it may involve a dialogue between sites. The proposed uses, and understanding of the overall purpose of implementing IVC equipment, will affect how often and how well the technology is used. Videoconferencing, when properly implemented, will fulfill a variety of purposes in a K-12 school environment. Northeast and the Islands Regional Technology in Education Consortium (2004) lists some of these purposes: direct instruction, professional development, virtual field trips, community enrichment, meetings with experts, graduate school classes, high school instruction, peer teaching/learning, regional meetings, diagnosis support, and instruction for homebound students. Although videoconferencing is a valuable tool for professional development, adult education, district management, and community involvement, this article will focus on videoconferencing to support K-12 classroom instruction, and suggestions to maximize the results of each type.



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## **COMMUNICATION WITH AN EXPERT**

High-speed connections and the development of low-cost Internet Protocol (IP) videoconferencing equipment has made it possible to connect students in classrooms with experts around the world. When students studying a concept ask questions of an expert in the field their understanding becomes deeper and the content richer. Connections with an expert also open new opportunities such as a demonstration of a physical procedure or process, perhaps using equipment not available to the students. The expert can explain new concepts, observe students performing a procedure, and offer feedback on the students' projects or work.

## **VIRTUAL FIELD TRIPS**

One of the most common uses of classroom videoconferencing is the virtual field trip. "Real-time virtual field trips involve the use of videoconferencing and audioconferencing technologies to permit students in one location to virtually visit and learn about people or places in another location" (Center for Interactive Learning and Collaboration, 2007, para. 4). Many organizations use H.323 videoconferencing for educational virtual field trips, since this connectivity option eliminates connection costs over the Internet. There are a large number of content providers available to work with students of all ages. Locating a program offered by a content provider is as simple as finding a portal such as the Center for Interactive Learning and Collaboration. Such portals allow the user to search for a program using a variety of search terms including content standard, grade level, subject area, and location. The content providers include museums, zoos, centers for the arts, libraries, colleges, and other institutions that serve the public with information and artifacts. Most of the content providers have an education coordinator, often a certified teacher, who will present a 30-90 minute program to a group

of students. Programs are generally scripted, but to get the most out of a videoconference, the teacher should contact the education program manager to discuss the details of the conference. This conversation must include expected outcomes and information about the students' prior knowledge of the topics being introduced (Cole, Ray, & Zanetis, 2004). Additionally, this conversation will give the teacher the opportunity to discuss the instructional design of the videoconference to ensure it remains interactive throughout the entire lesson and there are pre- and postactivities planned to assess the students' acquisition of knowledge.

Virtual field trips may serve various purposes including an expert demonstrating a physical procedure or process, demonstration of sophisticated equipment such as that utilized in a university science laboratory, or to expand students' knowledge of content standards using artifacts available through the provider.

## **INTERVIEWS**

Videoconferences may also be arranged with an expert for other purposes, including the opportunity for students to engage in question-and-answer sessions. Authors are often available to discuss their publications or the writing process in general. Contact the author in advance to discuss the book to be read prior to the conference. This communication also enables the teacher to determine the activities to be completed with students prior to the virtual meeting with the author, thus ensuring students get the most out of this conference. Scientists may engage in a dialogue about their area of expertise with students. Again, the scientist, perhaps a college professor, must be contacted well in advance to prepare for the session. Students' needed prior knowledge must be conveyed so that students get the most from the IVC.

## **CRITIQUES**

IVC between individual students and an expert can take the format of a critical appraisal at a distance. An artist, specializing in a medium, can critique student artwork and offer suggestions for improvement. Engineers meeting with small groups of students can discuss a physics project, eliciting higher level thinking skills or the development of a broader understanding of a problem. Students living in remote areas will benefit from studying music at a distance with an expert musician or college professor located in another region of the country or world. Previously, the student would have had to relocate to take lessons from a chosen expert musician.

## **CAREER EXPLORATION**

Experts also serve as mentors for career exploration. Videoconferencing gives students the opportunity to talk with people in many different career fields. A teacher or guidance counselor can facilitate short conferences in which experts share information about their chosen profession, including education requirements, a typical day, required strengths, and what makes the job alluring. Next, students are given the opportunity to ask questions. It is strongly encouraged that a bank of questions be predetermined to avoid embarrassing silence during the question and answer period. The expert must be given these questions ahead of time so that he or she has an adequate opportunity to prepare their responses.

## **LOCATING AN EXPERT**

Locating an expert may seem like an enormous task to many teachers, but a simple Google search will result in prospective experts for a given IVC. Once a Web site is identified, the listed contact information can be used to e-mail or call the potential expert. During a professional development session for teachers learning

about videoconferencing, Kellie McIntyre, K-12 instructional technology specialist for the Monroe-Woodbury Central School District, shared a story about a class that videoconferenced with a scientist working in Antarctica. The initial communication between the classroom teacher and scientist resulted from a Google search about outposts in Antarctica. The teacher located an e-mail address that resulted in scheduled videoconferences between her classroom and the remote research operation in Antarctica.

## **CONSIDERATIONS FOR EXPERT VIDEOCONFERENCES**

Videoconferences with content providers, or directly with experts, have advantages and disadvantages that must be considered. One educational advantage to videoconferencing is that it allows students to virtually visit places and programs that would not be possible otherwise. For example, students on the west coast could visit the NASA space center in Florida to learn about space shuttle missions. The experts contacted through videoconferencing are able to answer questions and invoke higher-level thinking from students about topics of which the classroom teacher has only general knowledge. Perhaps one of the greatest disadvantages of virtual field trips is that many content providers charge a fee for the connection. The cost per program varies from less than \$50 to upwards of \$500 per session, although some programs are provided for free. This cost increases more if an ISDN connection is required. Another disadvantage is scheduling of the lesson. Popular programs are often booked months or years in advance, making it difficult for a classroom teacher to determine the best date for the session in conjunction with the instruction taking place in the classroom. The best way to avoid these problems is to plan video conferences well in advance after ensuring that the district has the money to pay for

the conference and potential connection charges.

### **CLASSROOM-TO-CLASSROOM CONNECTIONS**

Conferences with experts are not the only beneficial use of videoconferencing; classroom to classroom connections can also achieve important instructional outcomes. Classroom-to-classroom videoconferences allow students to collaborate, compete, debate, present, and critique. Students should engage in constructivist activities. "For constructivist learning to occur, teaching must remain flexible and sensitive to learner needs, from intellectual, 109 cognitive, and psychological perspectives (Simonson, Smaldino, Albright, & Zvacek, 2006, p. 55).

Teachers preparing for classroom-to-classroom connections must ask the question "What will my students gain by connecting remotely to another classroom for the purpose of the lesson/unit?" The answer to this question should include answers such as the students at the other school:

- have a different perspective about the topic (they are urban and we are rural, they live in the South and we live in the North);
- are bilingual and we are learning a second language;
- recently studied the same topic as my students so
  - they can peer critique my students' projects, or
  - they can collaborate with my students to synthesize ideas and create new understandings through group projects.

### **COLLABORATION**

Classroom teachers responsible for the same syllabi can connect periodically to team teach a lesson from two different per-

spectives. A great example would be instruction on the Civil War through a connection between a Northern and Southern classroom. Teachers facilitate a discussion between students about the different biases found in their local textbooks. Another example, in the study of earth science and natural phenomena, involves students in different parts of the country sharing first-hand accounts of phenomena such as blizzards, tornadoes, and hurricanes.

Global issues, such as the depleting ozone layer or the economic effects of globalization, also provide excellent topics for classroom-to-classroom connections. Students living in an area responsible for emissions might discuss the negative affects of closing a factory or a requirement to only drive energy efficient automobiles such as hybrids. Students living in an area affected by the depleting ozone layer might discuss the negative effects on their livestock.

Another collaboration requires students to work together to create a product such as an advertising campaign to discourage students from smoking tobacco. This project would uncover different understandings of the issues faced by students from states that are great producers of tobacco compared to those of students from nontobacco regions. The use of videoconferencing between classrooms with different understandings of the world can help to expand students' tolerance to varying points of view.

Finally, students studying the same content might apply the information learned to local resources and then share the results with another class at a distance. For example, students learning about the chemistry of water can perform a number of tests on a local stream or river to determine types and levels of pollutants found in the water. Another classroom, from a school also found along the same waterway, might perform the same tests at a site miles away. The test results can be shared,

and the resulting video conference would be a discussion about the similarities and difference in the properties of the water and hypotheses for the differences.

## **COMPETITION**

Curricular expectations by grade and subject area for students are usually very similar within a state and contain overlap across states. Teachers may take advantage of classroom-to-classroom connections to allow students to compete. This competition can be strictly knowledge based, such as in a game show format, or can require students to synthesize information and solve problems such as through *Odyssey of the Mind*, an international educational program that provides creative problem-solving opportunities to students in a competitive format. It is extremely important that the teachers of the participating classes work together to determine the expected outcomes, share the assessment structure to be used, and create a format that can be shared with students prior to the day of the videoconference.

An example of a videoconferencing competition was shared by Alan November in a presentation he gave to a group of nonpublic school teachers in the fall of 2005. November showed a video clip of students competing in a citywide poetry competition. The judges of the competition were also connected through videoconferencing.

## **PRESENTATIONS**

Teachers and students in other classrooms may serve as experts to share information. Students in a foreign classroom learning English as a second language would become great mentors for younger students learning a second language, the older students' native tongue. The older students can present minilessons fully immersing the younger students in the language. PowerPoint presentations can become the medium for sharing photo-

graphs with a focus on vocabulary. Although the local teacher typically presents a similar lesson, the videoconference would be more motivational and the students would have an authentic opportunity to communicate in the language.

Presentations between districts keep students engaged and on task when they are interactive. A videoconference promoting literacy will include an information-sharing session in which students talk about their favorite books or authors. The presentation becomes interactive when students create a bank of questions that they ask of the presenters. For example, a conversation requiring students to compare and contrast something will elicit higher-level thinking skills (Marzano, Pickering, & Pollock, 2001). Student presentations that strictly take the format of stand and deliver can turn dreadfully boring, so teachers must plan for interaction.

## **STUDENT DEBATES**

Classrooms in different locations can also videoconference for the purpose of debating ideas. Debates between two classrooms may include topics such as the allowance of soda machines in school, required drug testing for student athletes, cell phone use in school, and mandatory community service projects for all high school students. These debates will generate new understandings if the demographics of the classes are quite different, such as students from urban and rural settings. The issues surrounding cell phones in school might be very different depending on the demographics of the schools. For example, students in a school deemed as unsafe might insist that they need a cell phone to ensure their personal safety. In a noncrime-ridden area, students might insist that the biggest problem with cell phones is that they can be used to text message answers on a test. Students would not only learn about the art of debate but

they would also be exposed to different understandings of the world.

## CONCLUSION

Virtual field trips with an education consultant provide the easiest way for teachers to begin videoconferencing. Once a comfort level is reached, the teacher can branch out to other experts or another class. It is extremely important that the teacher meet with the expert or other teacher to carefully plan the conference, taking into account time, content goals, activities, and assessment. When used properly, videoconferencing will open a new world to students.

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# Closing the Distance

## Success Coaching for Online Education Goes Mainstream

**Alan Tripp**

**N**ationally, student retention figures for higher education are troubling: only 35% of students seeking a bachelor's degree graduated within 4 years and 57% within 6 years (Knapp, Kelly-Reid, Whitmore, 2007). Among online students, graduation rates are even lower.

Clearly for students, dropping out of an academic program is a missed opportunity for personal and career advancement. For schools, lower retention rates mean lost revenue, lower rankings, and increased

enrollment spending to replace those students. At the same time, it can be argued that increased spending on enrollment programs is the least cost-effective solution to address this broad industry issue. A proven, more sustainable solution gaining wide attention today is to fund and implement programs that manage students for success, therefore increasing their persistence so that they complete their degree or certificate.

The need for a new approach of managing, or coaching, students so that they become more successful is highlighted by a recent report from the Sloan Consortium in which 64% of chief academic officers cite lack of student discipline as the single largest barrier to more widespread adoption of distance learning (Allen & Seaman, 2006).

As a case in point, Northeastern University's School of Professional and Continuing Studies has implemented a program called student success coaching to support its student population. Many adult undergraduate and graduate students taking classes on campus and online have been working with student success coaches over the past year as part of the school's focus on student service. According to Christopher E. Hopey, vice president and dean of the School of Professional and Continuing Studies,

Success coaching has been instrumental in helping us enhance the student experi-



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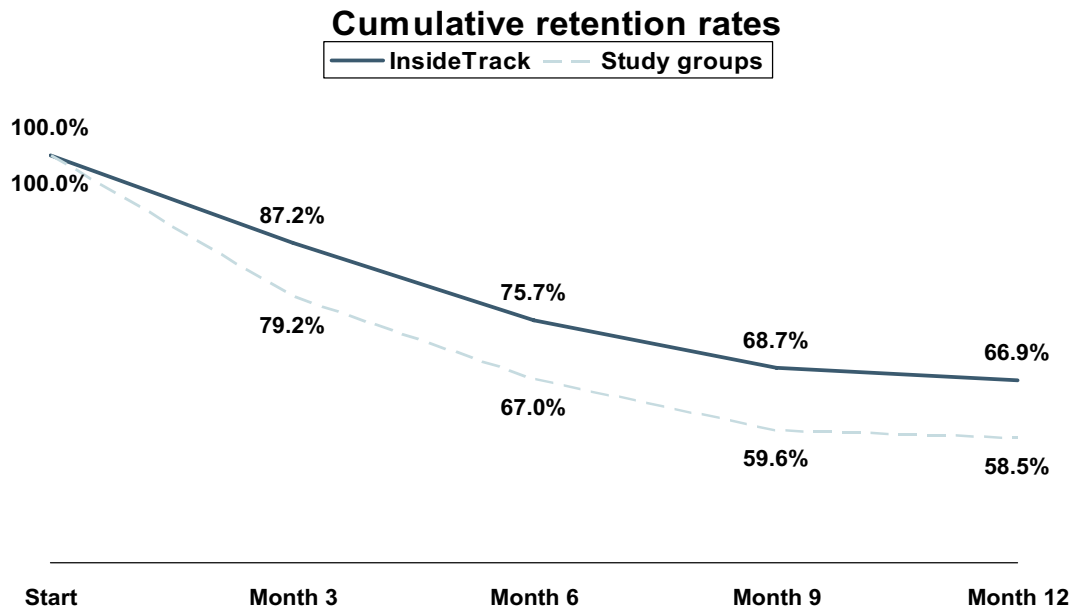
ence at the school. Working with a coach gives our students an edge, particularly when it comes to taking on the challenge of excelling at school while managing a variety of other responsibilities. Students tell us that they appreciate the added degree of personal attention that coaching offers. It's been a valuable investment so far. (personal communication, August 27, 2007)

As student success coaching moves into the mainstream as a solution to improve student retention, much has been learned about the effectiveness and implementation considerations for these programs. Some insights are provided in this article. One conclusion is certain: Done correctly, success coaching can significantly increase retention rates (see Figure 1). Equally important for the field of distance learning, it can encourage the student-school connection that continues to be a challenge for online programs.

## SUCCESS COACHING: THE RIGHT TOOL TO IMPROVE STUDENT RETENTION

In response to high attrition rates, colleges and universities have initiated a wide range of programs and services to help students achieve greater success and, ultimately, graduate. Most institutions offer some combination of advising services, mentoring, academic support, and "early warning" programs. These services often focus on first-year students who, overwhelmed by new experiences and expectations, are particularly vulnerable to dropping out. Unfortunately, they also seem to have limited positive effects.

Of course, academic problems are only one of many reasons that students leave school. Lack of skills necessary for success (study habits, time management, multi-tasking skills, goal setting, etc.), family distractions, low motivation or confidence, and uncertainty over educational and



*Note:* Lines and percentages represent cumulative persistence rates of InsideTrack Coached students compared to matching noncoached students. Sample size = 1,822 students.

Figure 1. Aggregated student retention results for Success Coaching Program.

career goals can all play a role in whether or not an individual student persists through graduation.

Distance learners face even greater challenges when it comes to staying in school. Unlike students entering college straight from high school, many distance learners have not been in a classroom (virtual or otherwise) for many years and need to reacquaint themselves with academic skills. Others are the first in their families to attend college and lack role models for negotiating the college process. The majority will be borrowing money for tuition, which can create additional financial strain on their households. And, because students sometimes have less interaction with faculty, administrators, and peers, most distance learners lack a strong connection to their institutions. Finally, pursuing a degree online demands a level of discipline and motivation that can be difficult for students to achieve even under the best of circumstances. Clearly, any effective solution to the retention dilemma for distance learning programs must take all of these demands, pressures, and risk factors into account.

In the past 5 years, a new approach to improving student retention, called success coaching, has been implemented at leading online universities including Westwood College Online, DeVry University Online, and the online division of Northeastern University's School of Professional and Continuing Studies. Originally developed by a company in San Francisco, InsideTrack, success coaching is based on a philosophy that for students of any age, achievement depends on the presence of multiple factors, including proactive guidance, frequent feedback, a sense of purpose, and regular support and motivation.

Inspired by the executive and personal coaching movements, student success coaching is distinct from other approaches to retention in a number of important ways. First, the program takes a holistic approach to students, addressing the full

range of issues that can cause them to leave school. The program also offers broader outreach than most retention solutions by seeking to increase the success of all students rather than just those at-risk or in crisis. We know that it can be difficult to identify at-risk students and that even "good" students can transfer or drop out. When students are more engaged and performing at their best, however, they get more out of their educational experience and are more likely to stay in school and graduate.

The hallmark of coaching, of course, is personalized interaction. With greater individual attention and scheduled, proactive one-on-one telephone meetings, problems are more likely to be identified before they become chronic and students are less likely to "fall through the cracks."

Success coaching was designed as a comprehensive solution that can be easily integrated into current student support systems. In addition to providing direct support to students, coaches encourage them to take advantage of existing services such as academic advising, financial aid and career counseling.

Effective success coaching programs are structured around a disciplined coaching methodology and multiple focus areas that are critical to student persistence. These focus areas are:

- **Managing Commitments:** finding the discipline and developing the skills to balance school, work, and family responsibilities
- **Finances:** Taking ownership of and control over personal finances, understanding where financial aid funds are coming from and how to pay for school.
- **Academics:** optimizing academic performance by preparing for classes online, learning to participate effectively in a new environment, reaching out for help, and developing effective study skills.



- **Effectiveness:** Learning the skills to set priorities, make plans, and be accountable for following through with these plans.
- **Commitment to Graduation:** staying motivated and committed to degree completion by connecting assignments and projects to long-term goals.
- **School Community:** becoming connected to the people who are part of the online school community, including classmates, advisors, faculty, and staff.
- **Health and Support:** managing physical and emotional health, and building an effective support network that will contribute to a rewarding educational experience.

Additionally, success coaching programs typically include frequent, structured communications between students and coaches, at least two to four times per month. During a session, a student and coach may work on any one (or more) of the focus areas detailed above. They also address the many challenges that can cause students to drop out, from unexpected financial difficulties to family concerns to a lack of motivation or direction. The best programs include online, Web-based applications that support student-coach collaboration—what InsideTrack refers to as goal achievement systems. With these systems, students can plan academic and nonacademic activities, define short- and long-term goals and track their progress on multiple focus areas on a daily basis.

Understanding the online student as someone who is balancing multiple commitments, priorities, and challenges has also proven to be an effective approach to recruiting students, as well. Coaches can be powerful recruiters because they recognize and respond to the demands and expectations of adult students who are planning to pursue a degree online. Going a step beyond the traditional admissions process by taking into account these multi-

ple factors and by providing one-on-one support to prospective students to help them clarify their goals and get organized to start school can be a reliable way to increase enrollment yields.

## COACHES: A BRIDGE TO STUDENTS

Finally, key to the success of any student coaching program is the training and commitment of the coaching staff. Using the InsideTrack model as an example, coaches are drawn from a variety of different backgrounds, such as education, counseling, law, business and, (of course) coaching. All share the desire to inspire and motivate people and offer strong management and leadership skills with a high level of emotional intelligence. Success coaches undergo a rigorous training program and then begin an intensive 2-year, multilevel certification process that enables them to evaluate and work with students effectively. As Kai Drekmeier, president of InsideTrack, states,

We are finding that coaches play an increasingly important role with distance learners, particularly when it comes to becoming part of the wider online campus community. One of the main attractions of distance learning is that students have the freedom to learn where and when they choose. Yet students also need to feel a strong link to their institution and to know where to turn for support, advice or help. Coaches provide that link and function as a centralized resource for students as they seek to integrate the many different educational and administrative experiences of their first academic year. (personal communication, July 5, 2007)

Students invariably describe their coach as someone who is on their side and concerned about their progress and success. Chelcey Williams, a DeVry OnLine student, put it this way:

I had to take a session off due to some financial difficulties and was really concerned that I would simply lose momentum and drop out. My coach Diana really listened to my concerns and helped me see that there were several things I could do to stay motivated. She helped me remember why I returned to school in the first place and why it was important to me to finish. She always helps me see the big picture and helps me find my way. (personal communication, May 2, 2007)

At the same time, coaches also provide a vehicle for online institutions to communicate more directly and effectively with students. For example, online universities often ask coaches to disseminate and reinforce updates to students on school policies or procedures such as changes in the financial aid or registration processes, not to mention reminding students to register for subsequent terms on time. The coaches then follow up to ensure that students understand and comply with the changes.

Because they speak with students all day, every day, coaches also provide important feedback about programs and classes, spot trends among students as they emerge, and can alert institutions to problems early on. According to one InsideTrack coach, Brendan Daly,

Because we seek out students to catch them in "real time" rather than waiting for them to come to us, we get a very balanced and full picture of the student experience. This also gives us more consistent information about what issues students are facing. (personal communication, January 19, 2007)

One online university, for example, was experiencing particularly high attrition from a new program. InsideTrack coaches were able to provide information and data detailing which students were leaving and why. As a result, the university was able to reevaluate the program and make changes to it with the goal of improving retention. Given the fact that most online schools are

relatively young and fast growing, real-time information that includes departmental and interdepartmental feedback based on qualitative data from students, as well as quantitative data on how portions of their population are being retained and why, can provide an institution with a significant strategic advantage.

A coach's primary role, however, is to empower online students by providing support, direction, advice and motivation tailored specifically to their needs. Coaches also help students develop the confidence and ability to persist through difficult periods as they pursue their degree. Kathy Hudson, a Westwood Online student, describes how her coach, Jason Young, helped her to adjust to returning to school at the age of 50:

There was so much work to do. I was totally overwhelmed, stressed, scared and doubting myself. Each class had a weekly to do list with assignments, and there was so much work to do in each class. Jason, my success coach, helped me to organize my activities. He started to ask me questions and provide suggestions about how to handle things. He reassured me that I could do this. Jason jumped in and coached me through my fears. I remember getting off the phone feeling like Wonder Woman. (personal communication, April 11, 2007)

As further proof of how widespread success coaching has become, to date, more than 85,000 students have worked with an InsideTrack Success Coach at more than 50 campus locations throughout the country. Of those, 70% have been nontraditional and adult learners. The results show that institutions implementing the program see a 20% reduction in student attrition. In addition, coached students have a 15% higher retention rate after 12 months than their noncoached peers. For institutions that use InsideTrack coaching, the combined drop in attrition and rise in retention has translated into a 10-15% rise

in total enrollment and tuition revenue—representing a significant return on investment.

The impact of the coaching program goes beyond the bottom line. Students who work with coaches are better prepared and organized for classes, assignments, and meetings with professors, advisors, and other students. They are more likely to meet registration and financial aid deadlines, thus improving the workflow for administrators and increasing the likelihood that they will return for the following term. Institutions that offer success coaching demonstrate their commitment to student achievement through personalized attention and offer something that differentiates them in the marketplace. Graduating more students who are satisfied with their educations and prepared for their careers enables an online university or program to enhance its reputation, which in turn can attract more prospective students.

According to The Sloan Consortium (Allen & Seaman, 2007), the number of

online learners in the United States has doubled since 2002, and more than 96% of the nation's very largest universities (those with more than 15,000 students enrolled) offer some type of online course (Allen & Seaman, 2006). With this rapid expansion of distance learning expected to continue, ensuring that students are more engaged, motivated, and successful will be critical to maximizing the value of online programs to both students and institutions.

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NORTHEASTERN UNIVERSITY'S SCHOOL OF PROFESSIONAL AND CONTINUING STUDIES HAS IMPLEMENTED A PROGRAM CALLED STUDENT SUCCESS COACHING TO SUPPORT ITS STUDENT POPULATION.

# Online Social Networks

## Educational Benefits and Dangers

**William Derrick**

Many of us have used the phrase “a small world” at one point in time. It refers to someone or something that at first glance appears to be completely unrelated to a topic or individual but on closer inspection is surprisingly recognizable. It is intriguing to find someone who is a distant relative or an acquaintance of someone you know even though they may be native to another part of the country.

In 1929, the Hungarian writer Frigyes Karinthy coined the phrase “six degrees of separation” in his short story “Chains” to explain this phenomenon. Karinthy asserted that any two people on the planet

could be connected through a series of acquaintances that number six or fewer. Karinthy did not pursue this notion following his publication but the concept was taken seriously in the 1950s by Ithiel De Sola Pool (MIT) and Manfred Kochen (IBM) who attempted to prove this theory mathematically. While they were able to phrase the question mathematically, the problem itself was never solved.

In the late 1960s, an American sociologist, Stanley Milgram, attempted to solve the problem by using an application of the principle created by Karinthy. Milgram created what became known as “the small-world problem.” Selected individuals from the Midwest were given a package and directions to send it to a person in Massachusetts. The information was too vague to send it directly so their objective was to determine someone they knew who could most likely identify the target individual. The process continued until someone who received the package could actually identify the target. The results of this activity showed that it took only six intermediaries for the package to reach the intended target on average. In the years to follow, subsequent experiments also resulted in the same conclusions, including online versions using e-mail.

Connecting with other people is a natural course of action for human beings. For many years, these connections could only be exercised locally and in person. With the advent of technology, the scope of these connections became much broader. Coupling technology with the small number of intermediaries necessary to connect any



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two individuals on the planet expanded the capacity of social networks to a global level. Any individuals or organizations that are connected through some form of social contact can form a social network. A social network not only establishes a connection, but communicates on a multitude of levels. Individuals can form a social network with common threads, such as acquaintances, employment, personal interests, and the like. The small-world problem showed that social networking was not limited by locality but could be spread out across a country and, ultimately, the entire world.

This notion was proved correct when social networking was introduced over the Internet with the creation of Classmates.com. Launched in 1995, Classmates.com was the first site to use the Internet as a place to gather socially. Members were able to search for past friends and relatives while communicating through personal Web sites, e-mail, and message boards. The success of Classmates.com launched a general movement toward forming and nurturing relationships online. Over the next 10 years, additional sites were created to take advantage of this new trend. Increasing numbers of individuals began using one or more of these sites as they became more functional

and easier to use. In 2003, this method of communication began to skyrocket with the advent of MySpace.com. Additional sites also included SixDegrees.com, Friendster.com, and Facebook.com. By 2006, there were over 200 social networking sites on the Internet. The top 10 sites as of April, 2006, are listed in Table 1. The initial audience for these sites targeted young and middle-aged adults but, as the trend continued, the more prominent sites began to concentrate their efforts on the rising teenage population. Presently, sites generally maintain either a focus on teenagers and college students or are more directed toward professionals.

The focus on the teenage and pre-high school teens has generated some concerns related to safety. Sites such as MySpace.com allow the users to create their own Web space including pictures, music, and backgrounds, while including any personal information they feel might be relevant. This has prompted speculation that more stringent laws should be implemented to restrict the age requirements and the amount of explicit material that can be used. Parents have genuine concerns that their children are posting too much information and also information that is very suggestive, whether verbal or visual. While many sites prohibit nudity

**Table 1. Top 10 Social Networking Sites\* for April 2006 (U.S., Home and Work)**

Site	Apr-05 UA (000)	Apr-06 UA (000)	YOY Growth
MySpace	8,210	38,359	367%
Blogger	10,301	18,508	80%
Classmates Online	11,672	12,865	10%
YouTube	N/A	12,505	N/A
MSN Groups	12,352	10,570	-14%
AOL Hometown	11,236	9,590	-15%
Yahoo! Groups	8,262	9,165	11%
MSN Spaces	1,857	7,165	286%
Six Apart TypePad	5,065	6,711	32%
Xanga.com	5,202	6,631	27%

Source: Nielsen/NetRatings, May 2006.

\*This is a custom category and does not appear in Nielsen/NetRatings' syndicated service.

and have personnel in charge of screening photos, suggestive or provocative photos are not addressed.

According to a new study by the National Center for Missing and Exploited Children (2007), 1 in 7 young people ages 10 to 17 acknowledged receiving an online sexual solicitation in 2005. Five years ago, when the survey was first done, the number was 1 in 5. About 4% received "aggressive" solicitations, in which the person wanted to make contact offline, a number that didn't decline from the previous survey. Social networking sites have made attempts to address these concerns, but they have not been successful in creating an environment that is particularly safe for young people.

While many of the social networking sites have a large teenage population, the number of adult users is also significant. Some of these individuals started their online experience while teenagers and have simply carried over this practice into their adult lives. However, as they enter and leave college, their online personal spaces serve as a resource for potential employers. Human resource departments often Google candidates to enhance their information base and create a more detailed dossier than a resume or interview can provide. Many candidates do not even realize that their personal space on a social network is available to anyone, including employers. "Even if material is removed, little on the Web ever really disappears. Online search engines like Archive.org's Wayback Machine are actively recording everything that has ever appeared on the Web" (Medintz, 2006, p. 27). This presents a real problem for someone who is less concerned with their online presence in their teenage years when their actions may decrease their chances of obtaining employment in the not so distant future.

Social networking sites have generated a number of concerns, but they have maintained an overwhelming popularity

among teenagers and young adults. "Social networking sites offer opportunities for self-expression and friendship building, and youth 'play-time' in such environments helps build skills that will be a foundation for success in the 21st century" (Williard, 2006, p. 18). Some of the reasons behind their popularity stem from the users' ability to create a Web page for themselves without knowing how to write html codes or purchase a domain name. In addition, their Web page can include pictures, music, and offer the ability to chat online with friends. Even with all of these amenities, many of the social networking sites are completely free under the condition that they can use part of your space for advertising purposes.

Considering the growing number of individuals who are members of the online social networking community, it stands to reason that this avenue could be pursued for educational purposes. One concentration for educational institutions is Internet responsibility. Third-party sites can be built to mimic many of the attractive qualities of the popular social networking sites. These sites are paired down to maintain a high degree of safety while still teaching young people how to effectively traverse this new and innovative form of communication. Many schools have simply blocked the use of blogging, photo-sharing, and social networking sites in favor of a more traditional approach to the online experience, that of a virtual library. A new trend for education is to embrace these new and innovative technologies while educating young people on how to be responsible when using them. The premise is that the students will likely use these sites regardless of the school's approach to the subject. Instead of ignoring this fact, the school systems should make it their responsibility to seize the opportunity to promote safety and proper use of Internet resources. Beginning at a young age, the students will be taught about the potential danger of social networking sites and be in a better position

to recognize and avoid them. Online lessons can be developed that review each key element in social networking, such as their personal description, photos, friends, and chat sessions. These lessons will introduce the topics, discuss the positive and negative aspects of each, and allow students to move forward with their own adaptation by adding this element to their own Web space. While this initiative is not touted as the savior for young people actively using online social networks, many students are currently using these sites in ignorance; this approach would serve to correct that facet of their experience.

Beyond the context of educating students' responsible use of the Internet, there are other educational benefits to be explored. Looking into specific academic disciplines could offer a more detailed explanation of how social networking sites can be used positively in an educational setting. Members of social networking sites place pictures on their personal Web pages. These pictures can range from personal photos to actual art work. All of these visual representations can be examined and discussed. Their appropriateness in general, as well as to specific groups such as college recruiters, employers, and school administrators, could be openly discussed through a structured dialogue. Guest speakers from human resource departments could be used to relate the importance of maintaining a more conservative approach to this aspect of social networking. Students could begin to develop the ability to determine which pictures are appropriate and develop a more intrinsic sense of right and wrong.

By contracting companies that are producing more education-friendly social networking sites, school districts can provide their students with a vast array of resources and new content strategies. Having the ability to restrict who enters a site, and which individuals are listed as friends, gives the educator the ability to control

student interactions. The students would be able to contact the students in their classroom, other students in the school, or another class of students somewhere else in the world. They are able to create discussions, collect and post data for projects, and have the flexibility to do so at their leisure.

The concerns related to safety would be eliminated, since the only individuals granted access would be the students and classroom teachers. Students would not be permitted to post pictures or blogs that are suggestive or sexually explicit in nature, and inappropriate behavior such as bullying would be monitored. This type of interaction would parallel some of the benefits of distance learning labs but with other components. The students would have the ability to add information or content to the site and do so at their convenience. The restrictions of being online at a predetermined time would no longer be a problem, as the students could access the site at any time.

Working in this environment, students could communicate with other students around the country or the globe. Completing projects that focus on a particular country or group of people could be exercised with real-time information, pictures, and interviews with individuals who are actually the subject of the project. Discussing world events could take on new meaning as students could interact with others experiencing these events through their online social network. Schools could be linked throughout the world and provide a much broader base through which education and teaching strategies could be derived.

In a distance education setting, discussion boards are often used for communication. While they share many of the same qualities the social networking sites maintain, they are limited in several ways. The basic discussion boards consist of text being posted under threads or general headings. The students read the informa-

tion, respond, and repeat the process to interact with the instructor and their classmates. While other forms of communication exist, such as Blackboard, they are limited in how many can participate at one time, and the students need to be logged in at the same time to participate in a more active class discussion. This medium does allow for graphics and other interactions to occur, and students are limited by time constraints and scheduling problems, especially if time zones are involved. In addition, Blackboard was not designed as a community development tool. According to Nicholson (2005), "it is important to consider ways of supporting both facilitated and non-facilitated community building activities in developing a distance education course" (p. 226). Using a social network enables the users to post a variety of media to the discussion at a time convenient for them and to interact with each other on a personal level without compromising the objectives of the class. Having their own personal space will enable the students to see each other, read about their interests, view videos about each other, and they can update their pages as necessary. Students could develop a more personal approach to the members of the class even though they may be spread out across the world.

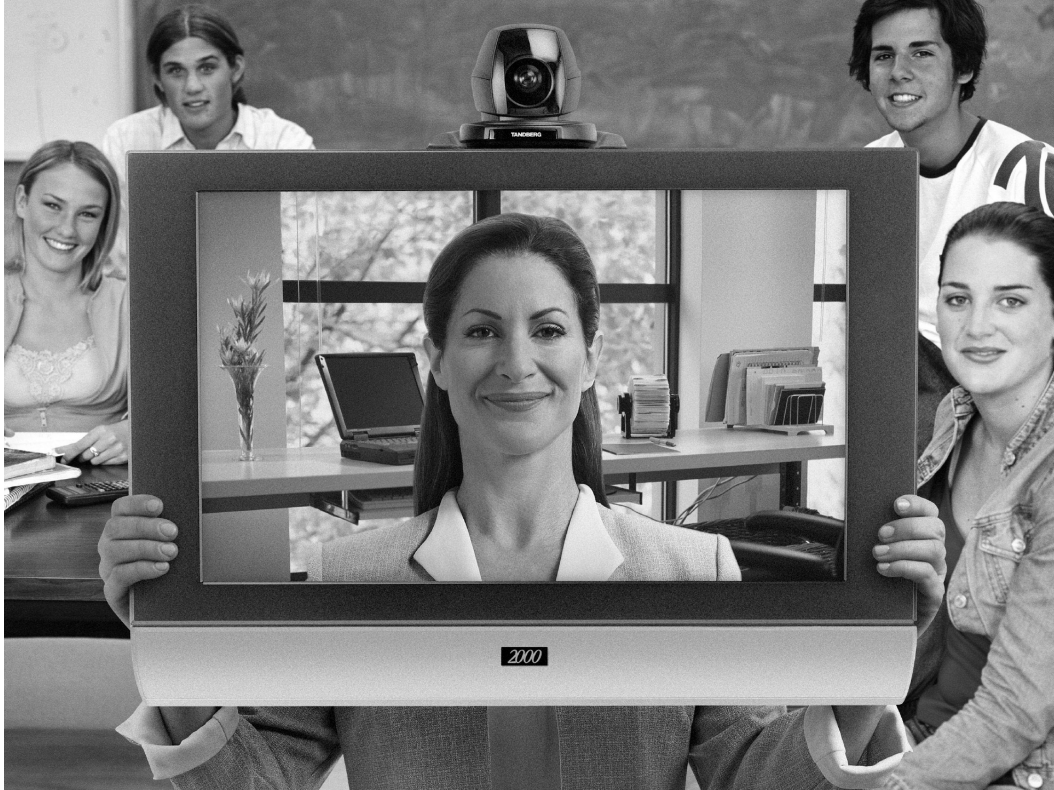
Social networking sites are here to stay. Their popularity has and continues to

grow with each passing day. As with many new technologies, social networking sites need to be approached as a learning tool and those who are members need to be educated on their proper use. There is no question that these sites pose potential dangers to their members, especially the preteen and high school age students, but they need to be embraced rather than blocked or ignored. These young people need to be educated on the proper use of social networking sites to give them an opportunity to use them responsibly and take advantage of their many positive aspects. Educational institutions need to be willing to explore social networking sites and make use of the new learning opportunities they can afford students.

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# Chats and Shared Understanding

## How Instructors Can Help Learners Use Academic Chat Rooms

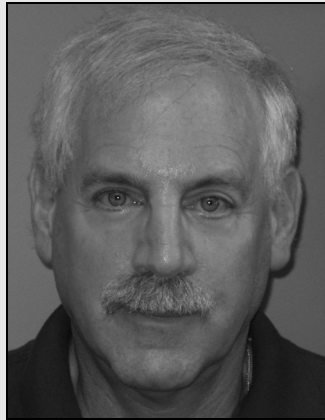
**David S. Stein and Constance E. Wanstreet**

### INTRODUCTION

Online learning discussion formats provide an opportunity for learners to share their experiences, negotiate meaning, and take ownership of the subject matter. Chat rooms also provide learners with anyplace and real-time ways to participate in academic discussions. Given that discussion leading to shared understanding is an expectation in many online courses and given the ubiqui-

tous nature of synchronous electronic communication, such as instant messaging, among the upcoming generation of higher education students, questions arise concerning how synchronous electronic learning spaces can contribute to the construction of shared understanding.

Shared understanding occurs when individual experience mediated through group discourse becomes collective thought that



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emerges from the exploration and analysis of personal experience, text material, and the construction of ideas from critical group dialogue. Achieving shared understanding involves responding to and synthesizing peer messages as well as thoroughly exploring difficult issues (Littleton & Whitelock, 2005). Shared understanding is the blending of private thought with public dialogue.

Increasing our understanding of how shared meaning develops through computer-mediated, real-time communication may help instructors design and facilitate discussions that lead to higher-order thinking in online inquiry-based environments. In this article we will first discuss the framework for using academic text-based chats in our course. A second section will describe the process the learners use to create shared meaning. In the concluding section, we will present recommendations for practice, an outcome of lessons learned from our experience in designing academic chat spaces.

As college instructors, we are challenged by the tasks of combining our learners' experiences with course content to develop higher-level cognitive skills, particularly the ability to integrate the various forms of knowledge, create an argument based on critical thinking, and develop self-regulated learning. During the past 5 years, we have been blending classroom instruction with Web-based learning to provide choice and learner control over the educational experience. Specifically, we give learners the opportunity to choose whether they will conduct small-group discussions in person or in chat spaces online. The outcome of the discussion is a group posting to the rest of the class that resolves a dilemma we pose each week.

Many of our graduate and undergraduate students are part-time on campus due to work and family responsibilities. The choice of discussion formats has provided opportunities for learners to participate in various ways without having to choose

between coming to a classroom and family and work obligations. Fulton (1991) suggests a relationship between the course learning space and learner satisfaction with a course. His SPATIAL model posits that (a) learners' perceptions of space affect their satisfaction, participation, and achievement; (b) certain aspects of a space are subjective; and (c) the authority that is conveyed by the physical environment and its layout can be changed. Having the ability to choose whether to work collaboratively in physical space or cyberspace ameliorates an authoritarian learning environment by providing more learner control over the educational environment.

However, we must still be able to foster online the same level of intellectual excitement and meaning-making that might be present in the physical classroom while providing adult learners with the time and place of their choosing to accomplish the intellectual work. As expressed by a learner in our spring 2007 class, there is a tradeoff between having visual cues and having the opportunity to carefully consider the ideas presented in the chat space:

My main concern with learning in an online environment is that you lose the ability to recognize tone and body language signals that would normally be helpful when interacting in an in-person group. On the flip side, I expect that an online learning environment will cause me to be able to more freely provide input at times when it is more convenient for me and will allow me to more carefully consider my input before putting it out there.

In our course, multiple chats occur during the same time; therefore, the instructor's presence can only be minimal in conversations taking place concurrently across multiple online locations. If our goal is to promote higher levels of critical thinking and to encourage self-direction among our learners, the question remains as to

how students negotiate through the chat in order to arrive at shared understanding with minimal interventions from the instructor. How can college instructors use the chat room as a tool for constructing knowledge and provide a space for academic conversations?

A growing body of literature explores ways in which learners use synchronous communication tools and the different ways students respond online in synchronous as compared to asynchronous learning designs. Asynchronous communication, such as a discussion board, is thought to encourage more time on task, while synchronous forms of communication, such as chat rooms, seem to generate higher levels of social and community-building responses (Bober & Dennen, 2001; Chou, 2000; Hrastinski, 2006; Hines & Pearl, 2004). Yet chats seem to encourage more soliciting of ideas, responses, and information, as compared to statements posted only on a discussion board (Hrastinski, 2006). In addition, chats are useful as a medium for giving and receiving advice on specific aspects of course work, for providing a sense of being in a class, and having a shared learning experience (Hines & Pearl, 2004; Hrastinski, 2006). Through real-time chats, students may feel less distant from other learners and more confident in their class performance (Hrastinski, 2006).

We have found that online discussion boards provide opportunities for individual students to form an understanding of the issues over a period of time. However, the asynchronous nature of discussion boards seems to be less dynamic than conversations occurring in real time (Stein & Wanstreet, 2006). Asynchronous discussions lack the spontaneity, responsive feedback, and intellectual challenges to thought that immediate conversation conveying a sense of learning together can bring to the learning environment.

## **CREATING SHARED MEANING IN A COMMUNITY OF INQUIRY**

In our online class design, we have used the Community of Inquiry model to build shared understanding. The development of shared understanding is associated with higher order thinking and is thought to proceed through a series of events: triggering questions, exploration, integration, and resolution (Garrison, Anderson, & Archer, 2001). Triggering questions reflect puzzlement or problem recognition. Exploration involves information exchange or suggestions offered for consideration. During the integration phase, learners critically link concepts and develop tentative hypotheses. Learners in the resolution phase write and critically critique solutions arising from the group conversation. To support the development of shared understanding, learners must also provide a sense of group membership by creating enjoyable group interactions and personally fulfilling learning activities (Rourke, Anderson, Garrison, & Archer, 2001). In an academic chat space, facilitative talk is used to keep the chat on task, provide direct instruction, and give guidance on how to proceed through the instructional space. Social and facilitative conversations are necessary for an academic chat to achieve shared meaning (Anderson, Rourke, Archer, & Garrison, 2001). An example of facilitative talk is illustrated in this comment from an undergraduate learner in spring 2007: "Looks like we are all here! I volunteered to moderate for this week ... but before we begin ... do we want to determine who will moderate next week?"

So how does shared understanding develop? From our experience with chat rooms, we suggest that learners work through a natural dialogic process leading to shared understanding. Collective understanding of an issue requires dialogue that helps group members understand various perspectives deeply. A pattern for academic chat evolves from the use of the four events leading to meaning

making. Our inquiry shows that a chat typically begins with a student comment indicating a triggering event followed by exploratory statements and integration (Stein et al., 2007). Tentative solutions in the integration phase are not automatically accepted in an effort to resolve the issue. Instead, solutions may be followed by exploratory statements or triggering events, indicating the testing of solutions in the context of each learner's experience and personal meaning. The following excerpt from a spring 2006 chat illustrates the pattern of meaning making:

JESS: Can someone be educated without an extensive formal education? (triggering event)

GABI: Yes.

FRAN: But I think "learned" means acquiring some information or knowledge and applying such things to real life through an informal ways [sic] such as experience or practice, not schooling. (exploration)

GABI: They can be educated through life and the experiences that are brought on by it. (exploration)

JESS: So, people can become educated through formal education, and they probably can become educated through other means as well, for example reading on their own. (integration)

FRAN: Yes. Then how can we define about [sic] a "learned" adult? (triggering event)

Exploration comments increase over time as members share different perspectives in depth. Exploratory statements may be followed by responses indicating agreement (e.g., "Jay, we may be saying the same thing.") Resolution comes near the end of a chat and may be followed by compliments or expressions of agreement (Stein et al., 2007).

Shared understanding involves exploring difficult issues thoroughly and synthe-

sizing group members' diverse perspectives. Group members ultimately come to a collective understanding through exploration of their individual experiences and knowledge. As members see the text on the screen and respond to it through questioning and collective exploration of a theme, a transition from individual thought to shared understanding begins. We found that learners work through a cycle of triggering events, exploring various aspects of an issue based on personal experience or interpretation of text, integrating various positions, and finally coming to resolution. While the cycle is not always followed in this fashion, our inquiry did show that all aspects of the cycle are covered in order for the group to achieve shared understanding of an issue (Stein et al., 2007).

A learner from spring 2007 presents her experience as one in which mutual teaching and learning took place in the chat room:

When we were going to meet in small groups for chats and discussions about the weeks [sic] topic, I was not happy. It seemed like a cop-out and an easy way to teach. However, as the weeks went on and the readings progressed, I found that I was learning many different viewpoints by being in these chats. My group was very diverse and it opened my eyes to many things I would not have thought about or gotten on my own. I also liked it when I would contribute a thought or mention a specific part of the readings and the group would ask me to elaborate or say they did not think of that. It was I teaching them and them teaching me.

Shared understanding emerges in a chat room from the interaction of various individual viewpoints; and through critical inquiry, a collective thought is developed.

## RECOMMENDATIONS FOR PRACTICE

Based on our experience in designing academic chat spaces, instructors should be aware that learners in a chat room follow a

process in order to reach shared understanding. The pattern might begin with group members exhibiting their presence socially by acquainting and re-acquainting themselves with each other. Instructors should expect that in a chat room social comments not related to the course content are still a necessary part of the instructional process. Facilitative talk is used to orient the group to the learning task. Social and facilitative comments seem to be necessary as preludes to the work of meaning making. Instructors should encourage social comments and communicate prior to the chat expectations for the chat; that is, the outcomes.

Instructors can promote using chats as a way to provide a space for all learners to express their voices and to make the space an authentic place for building group cohesion. In our experience, chats are useful as a medium for giving and receiving advice on specific aspects of course work. Chats are also useful for providing a sense of being in a class and having a shared learning experience, thus perhaps helping students feel more confident in their class performance (Hrastinski, 2006). Chat rooms can also reduce the feeling of being distant from other learners. Learners may be reluctant to engage in chats but do see the relevance of electronic learning to the skills needed in the workplace, as a learner from our spring 2007 class attests:

I'm slightly apprehensive about taking on-line classes because of the idea of communicating solely online for an extended period of time. I'm concerned because I find it easier to explain my thoughts personally as oppose [sic] to online. Despite my anxiety, I believe it is necessary to be able to communicate accurately online because it's a skill that will be very useful in the future in the workplace.

Instructors can caution learners that academic chat is not the same as casual chat, such as instant messaging. Instructors might provide an orientation to chat dis-

cussions, including written guidance on how to use triggering, exploratory, integrative, and resolving statements to maximize learning in a chat environment. Instructors might note that each member of the group can play a part in providing the social cohesion and facilitation necessary to move the group toward resolution.

Instructors might monitor chats, not to interfere in the meaning-making aspects of the chat, but to provide feedback on more efficient use of statements leading to shared meaning. In the absence of feedback, learners in the chat room will allocate their time to the social, facilitative, and content statements in a similar way from chat to chat. Over time, learners do not seem to change strategy for achieving resolution, nor do learners change the pattern of how they allocate their chat time (Stein et al., 2007). How to make use of an academic chat room is a skill. We suggest that the majority of talk be invested in academic discourse rather than in social or facilitative comments.

An instructor does not need to regulate the chat. Participants, through the use of facilitative comments, will structure their learning. Group members establish norms that militate against disjointed thoughts and inconsiderate treatment of one another. An undergraduate student posted this norm to guide her chat team in spring 2007:

Sometimes people say things that are disrespectful to other learners who don't see things the way they do. In that respect they get very harsh in the things they say. I am a firm believer that if you can't say what you type to my face then refrain from typing it. I value everyone's opinion but please state it in a respectful manner.

An instructor can improve the way in which chat members achieve shared meaning by providing specific opening statements for students to use as a means of encouraging higher order thinking, such as requesting evidence for a given

position. Instructors might consider meeting with chat members after a chat to discuss the statements that would move the group through the inquiry cycle.

When used in the context of a community of inquiry, learner-moderated chats lead to the space in which shared meaning develops. Chats provide a more casual, immediate environment than do asynchronous discussion boards. Chats give learners the opportunity to transform their personal meaning into shared solutions through a nonlinear process of asking questions, exchanging information, connecting ideas, and defending solutions.

Chats provide a space in which to explore the multidimensional nature of an issue in an informal way. At an individual level, chats give learners the ability to reflect on their thoughts as they type them in the message entry area. Based on the direction of the conversation, learners are able to make revisions before they send their comments. In addition, the group as a whole has the ability to see the progression of logic and higher-order thinking as the text unfolds on the members' computer screens and is revised, amplified, and integrated into shared understanding through feedback. Such a pattern can operate in the absence of direct instructor presence as learners negotiate through chats to resolve ill-defined problems.

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# National Distance Education Trends and Issues

## Intellectual Property

**Sharon DeVary**

### **INTELLECTUAL PROPERTY**

**I**n the United States, faculty and student ownership of intellectual property (IP) has become an important issue. The question of ownership has surfaced as a result of the increased acceptance and use of the Internet and distance education. The Internet and distance education have greatly changed the way we think and conduct our affairs with regard to learning and education. The IP issue

requires change in policies and procedures to maintain relevance to pace with changing technology and educational practices. There seems to be no single view for how these problems shall be addressed. This issue has multiple areas of concern: the need for policies regarding faculty authoring and ownership, student authoring and ownership, the impact of the work-for-hire employment status on authoring and ownership, and online course material and licensing issues.



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### **HISTORICAL BACKGROUND**

The doctrine of fair use was established by the courts to exempt certain activities such as teaching and research from the legal requirements of the copyright law. Before the 1976 revision of the Copyright Act, only two cases were brought against teachers for copyright infringements. In both cases the teachers lost because their extensive copying was found to impact the copyright owner's market for legally published copies. Although the 1976 act recognizes the existence of potentially fair uses, the act makes application of the principle subjective.

Classroom guidelines attached to the act make application even more confusing. Potential impact on a new, lucrative market for sale of rights to copy portions of books



and journals seems to dominate contemporary case law.

Desktop publishing, the Internet, and Web-based teaching will further degrade traditional applications of fair use for educational purposes. Guidelines are provided for faculty and others considering dissemination of potentially copyrighted materials to students via digital technologies.

The doctrine of fair use was formally adopted as a revision of the Copyright Act by the U.S. Congress in 1976. The doctrine of fair use exempts certain categories of activity in some instances from the legal obligation to obtain permission from the author of a work before copying, performing, or displaying that work. Potentially exempt activities include teaching, research, scholarship, reporting, commentary, and parody. The justification for the fair use exemption stems from the court's view that sometimes free and open discourse about ideas can be a stimulant to the creation of new knowledge and new creative works. That was more than 30 years ago. Since then technologies for reproducing, copying and displaying copyrighted materials have changed dramatically, and the focus of teaching activities has expanded beyond the classroom to include the airwaves (as in educational TV) and the Internet.

These changes have affected authors, teachers, and publishers. Perhaps it is time to revisit the subject to see if the definitions of "fair use" are still relevant. As the educational community moves toward Web-based education, and with a growing emphasis on distance learning, it may be time to look at the issue from the perspective of the changing face of education and technologies.

### WHAT ARE THE ISSUES?

Some argue that the "fair use" concept as it relates to education in fact is not "fair." It is not like the copyright law whose definition was taken from the Western culture's concepts of the individual and a free

market based on capitalism. It is closely aligned with the concept of the ownership of the technologies used to reproduce or distribute the works and who will gain or lose financially from a particular type of use. The problems arise from the immediacy of the works being produced with digital technology, because of their "real-time" applications. For example, work created using desktop publishing and distance education, including Webcasting, class Web sites, e-learning, and in-class real-time Internet access. Based on these new realities, perhaps the 1976 act is no longer relevant. In 1998 Digital Millennium Copyright Act was enacted to update this legislation but did not thoroughly address the most pressing issues.

### TEACHING INTELLECTUAL PROPERTY LEGISLATION

In the United States, there has been little effort made to teach intellectual property legislation. This curriculum could not be found in college economics departments and business schools. The best attempts were sporadic courses under the umbrella of graduate courses in the economics of technology or asset management. Graduate schools (other than law schools) do not produce intellectual property research and teaching specialists.

Placing intellectual property within the framework of business and economics courses causes them to be viewed from a perspective of commercial regulation or management techniques. Instead of being seen from a legislative point of view, this subject is viewed instead as a social or economic issue. Very few analytical papers even recognize that trademarks, copyrights, and trade secrecy laws operate quite differently from patents and these latter elements generally are not taught in economics courses. However, U.S. law schools offer extensive courses in IP law. While such courses are often taught by private practitioners, a few major law schools offer faculty with primary research and teaching

interests in IP. For example, Harvard's Business School offers courses in managing technology; for example, a class called "commercializing science and high technology." Students who attend this class represent the science, engineering, and medicine disciplines. It is from these schools that new generations of scholars are emerging. With the emergence of the global economy, perhaps it would be beneficial to make these courses available on an international level.

MIT's Sloan School has several courses on technology strategy and an entire sub-discipline on managing innovation and entrepreneurship. Engineering schools appear to give attention to the social and developmental aspects of new technologies and applied engineering. Graduate and undergraduate students are showing an increased interest in understanding the processes of innovation and technology trade in the globalization of the information economy. This approach will require the merging of multiple disciplines (Grossman & Lai, 2004).

## INDUSTRIAL ORGANIZATIONS AND INTELLECTUAL PROPERTY

Within industrial organizations, little attention is being paid to trademark protection. However, more attention is paid to copyrights in "new" industrial organization theory that focuses on network economies and information technologies. Copyrights tend to be dealt with the same as patents. This implies full rights versus protection against the limitations of fair use. For example, computer chip, test data, and trade secrets have earned only verbal and descriptive analysis. In addition, genetic resources and traditional knowledge have escaped economic modeling, perhaps because of the difficulty of conceptualizing collectively owned rights in a market context. These shortcomings need to be addressed and could be the foundation for a large research agenda.

New ideas and products are sometimes copied, reducing incentives for the original developers to invest in research and development (R&D). As a result, societies tend to suffer from insufficient investments in new technologies, information, and products without some form of policy intervention. In principle, direct R&D subsidies or investments by the government, combined with marginal-cost distribution, would be the optimal approach. However, such rights are limited in duration or scope for social and economic policy reasons. An interesting example of applying economic models to newer forms of IP may be found in the work of Reichman and Lewis (2005); they consider the economic incentives inherent in liability regimes with relatively open licensing. If consumers are unclear about the origin of products and cannot determine quality based on appearance, then counterfeit or lower-quality versions of new goods can be sold with false claims. This "lemons" problem is prevalent in lower-income economies.

Problems associated with the inability of businesses to put forth the true value of their technologies without worrying about losing those secrets is a central reason for limited flows of international technology transfer. More importance should be placed on the market expansion effects or the market-monopolization effects of IP protection.

IP may play a role in supporting the development of contracts that share rents across participants in multiagent enterprises such as films, books, recorded music, networks, and software. Economists do not pay enough attention to this angle of copyrights in favor of analyzing the potential for long-lasting copyrights that limit socially desirable uses of new information. This approach is important to copyrights that apply to cultural, educational and scientific materials (Arora, Fosfuri, & Gambardella, 2001; Jaffe, Adam, & Trajtenberg, 2002).

## WHY IS THE ISSUE IMPORTANT?

The issue is important because it can greatly impact areas that are at the heart of educational institutions: research, scholarship, and the transfer of knowledge.

It is important to have policies in place before issues arise so they may be dealt with fairly and quickly. It can save all parties time and money that is required for long drawn out lawsuits.

According to Gasaway (2002), several changes require new ways of thinking and dealing with these issues. First, faculty are designing and writing for online courses and digital courseware. Educational institutions are questioning if it is their best interest that they hold the ownership of such materials. Second, in addition to the materials being used internally, they may also be used for revenue producing purposes. Due to the complexity of digital materials being created faculty requires the support from the university with technical support such as computer programming, video production assistance, and computer support.

The electronic environment is currently forcing educators at all levels to revisit issues concerning intellectual property. Quick availability of information and data through the Internet has changed the way the general public views information, since it is an endless supply through use of computers on anyone's desktop. A dilemma concerning intellectual property occurs when owners' rights collide with users' rights and the public need to access and use resources. Thought-provoking papers about the Internet and intellectual property are becoming available on the World Wide Web.

Dyson (n.d.) has written a book, *Release 1.0*, and several articles dealing with intellectual property on the Internet and the intellectual value of property. An article by Roccia (n.d.) presents an interesting perspective on copyright law in the United States and possible changes or clarifications needed to enhance applicability to

the Internet. Current copyright laws in the United States do not quite address the Internet per se because it represents a challenge to existing law and interpretations. Burk (1997) presents a discussion of intellectual property issues and challenges presented by the "electronic frontier."

## WHAT DOES THE LITERATURE SAY?

According to Twigg (2000), most published articles on this topic concur with the following:

The real need is for an institution to have a clear statement of its policy, and a mechanism to ensure the issue of ownership is addressed as early as possible in the development process. Institutions must do more than state a clear cut copyright policy is required. The lack of a policy can be disruptive to the institution. Most colleges and universities have little understanding of these issues. Since higher education institutions are large, highly diffused organizations, they frequently have no centralized way to focus attention on how to address these issues. Instead, policy is being debated unit by unit. Even when an institution-wide policy exists, in many instances there is no strong conformity. (p. 34)

How can we deal with this issue? According to Gasaway (2002), there are three steps that can be used to put this process in motion.

## THE PROCESS

The ideal process of developing a copyright ownership policy must involve representatives of all interested parties. A policy drafted solely by legal counsel with no faculty, staff, or student input will be much less palatable than one a broader group helps draft. It is critical that the process be viewed as fair and that the policy ultimately respects the rights and expectations of all parties, including the institution.

## CONTENTS OF THE POLICY

Even within traditional works produced by faculty, a copyright ownership policy may differentiate among scholarly publications, artistic works, and instructional materials in assigning copyright ownership. Institutions will most likely want ownership of instructional materials. For example, a college or university may claim ownership if the campus has granted release time to the faculty member in order to develop the instructional materials, or if there is separate payment to the faculty member for course development. On the other hand, the university's real interest may be in the right to continue using the work within the institution rather than in ownership of the copyright.

## IMPLEMENTING A NEW OWNERSHIP POLICY

If the new policy alters the old copyright model then the acceptance of the policy by the campus community is crucial. Faculty must be involved from the start through the drafting and "selling" the policy process. If the drafting committee is chaired or cochaired by a faculty member, all the better, since this may reduce the resistance to a new policy. As the policy nears completion, a draft should be shared with the various governance groups on campus. The faculty senate and faculty members of the drafting group are ideal spokespersons for the policy.

## CONCLUSION

Intellectual property issues are very important. They can greatly impact areas that are at the heart of educational institutions: research, scholarship, and the transfer of knowledge. It is important to have policies in place before issues arise so they may be dealt with fairly and quickly. It can save all parties time and money by not having to deal with long, drawn-out lawsuits. According to Gasaway (2002), several changes require new ways of looking at

and dealing with this issue. Faculty are designing and writing for online courses and digital courseware. Educational institutions are questioning if it is their best interest that they hold the ownership of such materials. In addition to the materials being used internally, they may also be used for revenue-producing purposes. Due to the complexity of digital materials being created, faculty require the support from the university with technical support such as computer programming, video production assistance, and computer support.

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# The Virtual College of Texas

## United We Stand

**Jeff Getchell**

### INTRODUCTION

Distance education collaborations are common among institutions of higher education. Collaborations allow institutions such as community college districts and university systems to take advantage of a pool of resources that would otherwise be unavailable due to cost restrictions. This pooling of resources has a number of cost advantages for budget-strapped institutions that include the sharing of common resources, allocation of costs over a broader base, and a wider knowledge base of faculty and administrators. One such collaborative effort within the state of Texas is the University of Texas

TeleCampus. The UT TeleCampus is a collaborative effort of the University of Texas System that brings together the 15 UT campuses to offer complete Web-based degree programs (UT TeleCampus, 2007). The UT TeleCampus has been quite successful in bringing degree programs to students who would be unable to complete a campus-based degree program due to work and lifestyle schedules.

There is another lesser known yet no less successful higher education collaboration within the state of Texas that provides access to Web-based courses where otherwise there would be none. The consortium is called the Virtual College of Texas, or VCT. The VCT is a collaboration of Texas-based community college districts and technical colleges that provides access to college courses that are normally offered at a student's local institution but are unavailable during the semester needed. All VCT courses are Web-based, opening up higher education opportunities to everyone regardless of geographic or time constraints.

The purpose of this article is to provide an overview of the VCT and the unique service that it provides Texas-based community college students. The article will examine the history of the VCT, provide an explanation of the unique host-provider service model, describe the organizational structure, and discuss some of the challenges that the VCT has had over its 8 and a half-year life span. The article will conclude with possible future directions for the VCT.



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## **CONCEPT**

It is simply not possible for institutions to offer every course in their catalog during every academic semester within every academic year. There are not enough resources, particularly instructors and classrooms, to provide such an all-inclusive level of service. Rather, institutions will offer credit-based courses on a regularly scheduled basis that is based on a number of factors. For example, lower-division courses will be offered more often than upper-division courses to accommodate the greater number of lower-level students; courses that are required for degree plans will be offered more frequently than elective courses; capstone courses will usually be offered once each academic year to accommodate students completing program requirements.

However, there will always be a certain number of students who somehow fall out of the normal sequencing of course offerings. These students may need to register for a course that is necessary for completion of their degree but which is not available during the academic term needed. Normally, the student would have no other option but to wait for the next academic term when the course would be offered. This is incredibly frustrating for the student who must place graduation and occupational plans on hold until the course is offered.

Colleges decide for themselves whether or not to participate in the VCT. Participating colleges also determine to what extent to participate. For example, some colleges may only provide courses to host institutions due to the large number of locally provided distance learning courses. Other institutions that have fewer numbers of distance courses may simply serve as host to institutions that are providing courses to VCT. And there are some institutions that both host courses and provide courses.

## **VCT HOST-PROVIDER MODEL**

The host-provider model was originally developed by the community college presidents in 1996 (VCT, n.d.). The model divides the resources of the student's home institution, or host, with the institution that is providing the course content and instruction, or provider. This combining of resources allows multiple institutions to provide Web-based courses to students when needed without sacrificing critical services such as library, counseling/advising, computer access, testing services, tutoring, and others.

With the host-provider model, the host institution initiates the process of registering the student. The student contacts the host institution's VCT coordinator to begin the registration process. The host VCT coordinator verifies that the course is offered in the local course catalog. If so, the coordinator then determines whether the same course is being made available at a VCT provider institution for that term. If so, and the course has been approved by the appropriate academic chair of the host school, then the student is enrolled in that course.

The host-provider model is based on two factors. The first is that Texas community colleges are mandated by state law to use a common course numbering system. This system, known as the Lower Division Academic Course Guide Manual, or ACGM, ensures that courses using the same number have similar course outcomes and are therefore transferable to any other Texas community college. This transferability of courses allows Host institutions to record course grades directly on to student transcripts for courses taken from a provider institution.

Second, all Texas community colleges fall under the Southern Association of Colleges and Schools, meaning that each VCT member institution abides by and has been accredited by the same accrediting agency. Each VCT member institution also falls under the policies and procedures of the

Texas Higher Education Coordinating Board (THECB). The THECB requires that all Texas institutions of higher education submit a distance learning plan every 5 years.

### **THE HOST INSTITUTION**

Once enrolled, the student is supported by the host institution in a number of ways. First, the host institution collects all tuition and fees associated with the course. The student pays in-district fees if located within the community college district of the host. The host also provides all student services to support the student that include but are not limited to access to all library materials and services, tutoring services, testing center services, special needs assistance, counseling and advising, administration of course evaluations, awarding of course credit transcript updates, and generally looks after the academic welfare of the student as if enrolled in a locally provided course. The host institution also pays the provider institution a per-student instructional fee to cover the costs of instructor and instruction.

### **THE PROVIDER INSTITUTION**

The provider institution offers a similar set of services. The provider is responsible for defining the course content and the instructional methods for the course, for the provision of all class activities such as projects, assignments, testing, and awarding of final grades, and generally treats the student as if the student were enrolled in a locally provided course.

The provider institution is paid a per-student fee for the provision of these services by the host institution. The amount paid to the provider will vary, but is typically no more than what the host receives from the state based on contact hour reimbursement. This per-student instructional fee is always paid by the host and never directly from the student.

The host-provider model provides a number of benefits to students. First, students will have access to a robust schedule of courses incorporating all participating VCT institutions. The likelihood of not finding a course when needed is greatly diminished. Second, the student has available a full complement of student services that are provided locally by their home institution. The student will also pay in-district tuition and fees if a legal resident of the college district of the host institution, regardless of where the course provider is located. Next, all VCT courses will appear on the student's local college transcript as if taken at the student's local institution.

The VCT, along with the host-provider model that provides the foundation of the delivery model, as been approved by the Southern Association of Colleges and Schools, the accrediting agency for institutions of higher education in the state of Texas.

### **VCT BACKGROUND**

The Virtual College of Texas began in 1997 as an initiative of the Texas Association of Community Colleges (VCT, 2004). The presidents of Texas state community colleges gathered together and established the host-provider model which created the foundation on which VCT initiative now operates. A 3-year pilot of the VCT began in the fall of 1998. Formal operations began in 2001 after the completion of a successful pilot program.

### **VCT ADMINISTRATION**

The administration of the VCT organization is done by a number of individuals and groups. At the top is the Texas Association of Community Colleges (TACC) which oversees all aspects of the VCT. Within the TACC resides the Distance Learning Advisory Committee (DLAC), which provides general oversight, guidance, and direction for future initiatives. The TACC executive



director provides immediate oversight to the VCT, while the TACC assesses the overall performance of the VCT and determines the future expansion.

The DLAC provides the VCT with general counsel and direction. The DLAC is made up of a variety of instructional, technical, and distance learning administrators from a mixture of community college districts within the state. The TACC appoints the members of the DLAC, which is comprised of two representatives from each of the six TACC-defined regions in the state. DLAC representatives serve on the DLAC for 3-year terms, with the terms from two regions expiring each year. The TACC appoints new DLAC members based on nominations received from the colleges within each of the regions. It is the responsibility of the DLAC to recommend new projects, to review and comment on current and proposed policies and procedures, and to provide general guidance on VCT plans and activities. It was the DLAC that played a key role in the initial establishment of VCT policies and interinstitutional collaborations that helped form the VCT organization.

### **INSTITUTIONAL ADMINISTRATION**

The daily operations of the VCT are provided for by personnel at each of the member institutions, as well as a small staff at the state level. At the college level, each VCT institution appoints one individual to serve as the VCT coordinator. The VCT coordinator oversees the overall VCT program activities, which include course verification, student registration, grades, transcripts, payments, and other activities. The coordinator also provides formative evaluation about the VCT policies and procedures and provides feedback to the state VCT director.

The coordinator also plays a key role throughout the semester. Prior to the start of classes, the coordinator responds to student requests for information as well as

serving as a problem solver as issues come into play. During the semester, the coordinator assists the provider instructor with course orientation, course testing, technical assistance, assistance with student services, updating of course rosters, the tracking and processing of course withdrawals, invoicing and payment processing, and the completion of mandatory reports. The end-of-course processes for coordinators includes submission of grade reports to the host registrar, and ensuring that all provider invoices are promptly paid.

Each institution also has one or more course contacts. The course contacts are responsible for the hands-on activities of course enrollments and ancillary duties. Depending on the size of the institution and the number of students involved, the duties of VCT coordinator and course contact may be done the same person. The benefit of having locally provided VCT coordinators and course contacts is the personal service that can be provided to students when enrolling and taking courses through the VCT.

### **STATE-LEVEL ADMINISTRATION**

At the state level, the VCT is supported by a staff that includes the VCT director, a Web manager, and supplemental contract services as needed. The state-level VCT staff coordinate the activities of all member institutions, including communications, policy and procedure questions, maintain the VCT Web site and applications, create and distribute reports and informational newsletters, create proposals, carries out the recommendations of the TACC and DLAC, and organizes statewide meetings and retreats. In addition, the VCT director represents the VCT at all TACC functions.

Administrative guidance for VCT operations comes from a set of three documents: the memo of understanding, the VCT Host and Provider College Practices and Responsibilities, and the VCT Operations Manual. The MOU, as pointed out

earlier, confirms the participation of member colleges in the VCT. The MOU also confirms that the school will apply the same standards for VCT-related courses as is applied toward local courses. Lastly, the MOU confirms that the institution will follow the duties and responsibilities detailed in the operations manual and that the institution complies with all requirements set forth by regional accrediting agencies and professional associations.

The VCT Operations Manual details the various processes and procedures to be followed by host and provider colleges. This manual specifies the duties, responsibilities, and actions that are to be followed. The operations manual also specifies the critical practices that must be followed for compliance with the Southern Association of Colleges and Schools, the VCT regional accrediting agency. The operations manual also provides specific instructions on operations of the VCT Web site, particularly the online course scheduling and student reservation systems.

### **ELECTRONIC OPERATIONS**

VCT support operations are almost entirely Web-based and supported by a number of applications. First, the VCT Web site contains access to a statewide listing of courses and schedules available to students. The Web site contains a reservation system that is used by VCT Coordinators or Course Contacts to place students into courses. The Web site contains a roster database that indicates each student and the course or courses they are enrolled in.

A function of critical importance to host institutions is the faculty rosters database containing the credentials of instructors from Provider institutions. Using this application, department chairs from host institutions can log in and verify that provider instructors have the appropriate credentials for the courses they teach.

The Web site also contains the final grade reports and the day of record, or DOR rosters. The DOR rosters determine the number of students enrolled in VCT courses as of the day of record, usually the 12th class day.

Other electronic functions available at the site include documentation of all administrative procedures, the contact information for statewide VCT staff and administrators, VCT committee members from the TACC, other significant institutional personnel, news and reports related to VCT activities, along with information on professional development activities, projects and program initiatives. Of particular note is that all transactions and information of a confidential nature are password-protected.

### **VCT BENEFITS TO STUDENTS**

The benefits that the VCT provides to Texas students are significant. Among the most significant is the statewide schedule of courses to which students have access. This virtually assures students that the courses they will need will be available at the appropriate time in their educational plan. In addition, all VCT course are provided over the Internet. Web-based courses allow students from all walks of life and with varied work schedules to complete college courses on their schedule rather than the schedule of their local institution. The VCT model makes it much less likely that a student will be unable to register for a course at the point in time needed. VCT students are also supported with locally-delivered academic support and student services. VCT students pay in-district tuition and fees if residing within a community college district, irrespective of which college provides the course taken through VCT. Lastly, any course provided through the VCT is maintained on a single college transcript at the student's local school.

## **VCT BENEFITS TO PARTICIPATING COLLEGES**

Each community college decides for itself whether or not to participate in the VCT, and if they choose to participate, it is up to each college to what degree they will participate. Some colleges only provide courses because they locally offer large numbers of distance learning courses that usually meet their students' needs. Other colleges, with fewer locally offered distance learning courses, may serve mostly as host colleges, meaning they enroll students in courses provided by other colleges. Still other colleges both host and provide courses.

## **ISSUES**

Even though the VCT has created a well-functioning and meticulously planned administrative structure, the operation of the VCT is not without its organizational annoyances. For one, students from one school that are enrolled at a course from a provider school do not appear on the provider roster. Instructors must obtain a listing of VCT students from their local VCT coordinator for each course being offered through VCT. The logistics of testing at multiple locations can also cause headaches for both instructors and VCT coordinators. Obtaining test proctors or coordinating with testing centers at host institutions can be a source of frustration, particularly if student schedules change. The paperwork flow can also be burdensome. Census rosters must be obtained from each institution. Grade reports create a special set of frustrations, as multiple grading systems must be learned so that grade reports can be entered and returned.

## **ACCOMPLISHMENTS**

The VCT was awarded the Star Award in 2000 by the Texas Higher Education Coordinating Board (VCT, 2006). The award was presented by Governor Rick Perry to the

governing body of the VCT, the Texas Association of Community Colleges, which also represents all community colleges in the state of Texas. The Star Award is presented to educational programs that demonstrate excellence and that contribute significantly toward the goals of the state's Closing the Gaps higher education plan. The VCT was honored for contributing toward those goals by increasing access to and participation in higher education.

The VCT has also enrolled close to 41,000 students during the past 8 and one half years. According to Ron Thomson, director of VCT operations, "Each of these enrollments represents a student who was able to get a course at a particular point in time that was not available at their local institution at the point they needed and otherwise they would have had to delay their educational plans and pick it up at another time" (personal communication, March 27, 2007).

## **FUTURE DIRECTIONS**

One possible direction the VCT might take is with collaborative degrees and certificates. In 2003, the TACC had the VCT examine the idea of collaboration degrees among community colleges much like what 4-year colleges and universities are now doing. Students would begin coursework at one institution and then transfer to another institution for program completion. The degree or certificate-offering institution would open up some of their courses to host institutions, with the provision that students would later transfer to the provider institution to complete the program.

## **SUMMARY**

The VCT is providing an important service to Texas community college students. The ability to enroll in a needed course when it isn't available locally has had a significant impact on students wanting to complete

educational programs but unable to do so due to scheduling issues with their home institution. Based on the number of students having enrolled in courses through the VCT, as well as the number of community and technical colleges that are current VCT members, it is obvious that the VCT service model is working, and working well. It is the united efforts among the TACC, VCT, host and provider institutions, and all other involved entities that make the system work. Massive collaboration is the hallmark of the VCT, and it will undoubtedly continue to serve the community college students of Texas well into the future.

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# Learning Management System Implementation

## Building Strategic Change

**Sandra A. Sallum**

**T**he University of Miami reinvented the process of professional development and training within the organization from static to dynamic by instituting the use of a learning management system to automate the registration process, give real-time access to the training course guide, give employees access to their training records, and create a portal to online computer-based learning modules (CBL). A learning management system, or LMS, as defined by most users in collaboration forums and in the industry, is a solution package that allows for the

delivery and management of content and resources to all employees. The system is usually Web-based and provides continuous access to learning content and administration. At a minimum, the LMS allows for participant registration, the delivery and tracking of e-learning courses and content, and testing, and may also allow for the management of instructor-led training classes. In the most comprehensive LMSs, tools such as competency management, skills-gap analysis, succession planning, certifications, virtual live classes, and resource allocation are provided. The initial implementation of a LMS (NetLearning) at the University of Miami in June of 2004 under the leadership of Marcia Beckford, executive director of the Professional Development and Training Office (PDTO), met the minimum requirements for a system of that nature and at that time met a myriad of needs for the university community. Beckford's vision was to tie professional development goals with performance evaluations and to create a reward system that would award those committed to professional development and working to narrow their skills gaps. She understood that NetLearning was not the right system to support that vision. NetLearning had been purchased to track and publish training at one of UM's hospitals and was never meant to be used as an enterprisewide solution. Scalability would become a major concern. This was validated a year later, when



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increased usage slowed the backend of the system. It became apparent then that NetLearning could not offer the features needed to support the e-learning and professional development goals set for the effort. Data would need to be collected on the benefits of a LMS for the organization and why NetLearning would not be able to support those goals. Even though NetLearning did not have the needed functionality, it became part of a strategy for change.

### **UNDERSTANDING THE NEED**

Despite all the successes and positive outcomes of the initial implementation, the goal for the LMS had changed significantly since its inception. In 2004, when it was launched, the goal was to track courses and provide 24/7 availability, which would decrease live course contact due to time constraints. This goal was accomplished as illustrated in Figure 1. The goal for the LMS morphed into providing a vehicle to assist in career enhancement through competency development, tightening learning plans, and using professional development as a vehicle to lead to reduction in turnover due to skill gaps in leadership. Based on user feedback, limitations of the initial system, NetLearning, and the direction of the strategic plan, a decision was made by Beckford to eventually migrate to a new environment that would provide a more comprehensive learner-centric experience to the learners and would meet organization goals. The need for this change was supported by exit interview data, performance issues, and the interviews conducted by the business and finance system design team at the University of Miami. The organization needed a system that could provide compliance reports and data on skill and competency gaps that could be translated into career mapping and then be used as tools for succession planning and promotion. To get the financial support and buy in for a new system, a plan

was set in motion to establish the needed infrastructure and to guide training practitioners through a paradigm shift on how professional development was to be done at the university.

Before we can understand the steps taken to manage change during this period, it is important to understand the events and outcomes that transpired from this implementation and the successes that enabled the organization to accept the shift from instructor-led training to a blended format approach. Beckford's strategy was to create the structure needed to support the vision for the organization's learning, even without the adequate tools. As the projects were rolled out, the stakeholders were open to the possibilities and were coached on the acquisition of skills needed to implement such change. The changes to professional development in the 3 years under Beckford's leadership have been remarkable. Employees have gained access to required modules 24/7 from any environment that allows them to learn. The CBL portion of the system allows employees the flexibility of learning at their own pace and at a time that is more practical for them and their departmental needs. Because training addresses knowledge, skills, behaviors, and attitudes, various levels of knowledge acquisition are equalized. This expedites the skill-building process by concentrating on practical experiences that increase transfer of learning back to the job. Trainers gain time for skill building by utilizing the content creation tool to impart knowledge; thus, more classroom time can be used to focus on proficiency, training reinforcement, feedback, and learners' questions. Since NetLearning's implementation and as of this writing, 250 CBLs have been designed and developed by various departments, utilizing both the learning management system and content creation tools. An additional 108 CBLs were purchased for use by one of the Medical Center's specialty hospitals.

## **THE CREATION OF A SUCCESSFUL STRATEGY**

PDTO e-learning and distance education strategy produced a paradigm shift at the university that created opportunities as well as challenges for the department. PDTO's change management strategy was based on Rogers' diffusion theory. It was implemented starting in early 2005, and included the following steps, (1) identification of a champion for change, (2) realignment of existing resources, (3) increasing number of course offerings and traffic to the system (4) set standards and model innovation behavior, (5) get lateral buy in as well as from leadership, and (6) partner with designers and SMEs. PDTO's plan included (1) create excitement, and (2) show proof. PDTO created excitement by:

- Identifying and getting the support of a champion;
- Keeping the champion informed;
- In the beginning, going for quantify, increase traffic in the system and number of online offerings available;
- Collect data on system usage, participant feedback and manager's comments;
- Brand the system early so people feel they own it; and
- Educate stakeholders on the possibilities and have them promote standards and best practices.

The first step in the process was to find a champion who would be supportive of the effort and who could promote the initiative at higher levels within the organization when needed. PDTO found champions in Thomas Roosevelt, vice president for human resources, and Paul Hudgins, associate vice president for the Miller School of Medicine Human Resources at the university. They believed that this initiative would bring the employees professional development to the twenty-first century.

The second step was the realignment of existing resources. Different processes and tasks became automated after the implementation of NetLearning. PDTO's employees had to be repurposed and different positions created to accommodate the new business requirements and goals. The staff needed to take on more of a consultant and coaching role. Beckford assessed her staff and identified skills gaps that needed to be closed before they were ready to take on the challenge. A staff professional development plan was created to allow staff members to gain the necessary skills and be ahead of the curb in promoting the standards and principles of distance education and adult learning; this allowed them to move from transactional to transformational work.

The third step was to promote e-learning, not the tools. This meant that the CBLs were initially created using tools that designers were most comfortable with—for example, PowerPoint. PDTO concentrated in promoting best practices for e-learning and to introduce different methodologies and techniques into its own CBLs. PDTO introduced new tools in their own CBLs, using different departments and initiatives as pilots for the new technologies. Beckford understood that, in many cases, training practitioners within the university did not have a training background and, because of that, they lack the skills needed to effectively design training. A forum was created to train training practitioners on instructor technology methodology, new tools, and techniques. PDTO started to act as consultants on best instructional design practices, guiding the stakeholders from outline presentations to interactive content and sound design. As practitioners became familiar with new methodology and tools, they demanded different functionality from the system. As those feelings became widespread, support for a new system grew stronger. Through collaboration efforts and training, the stakeholders were now able to make an

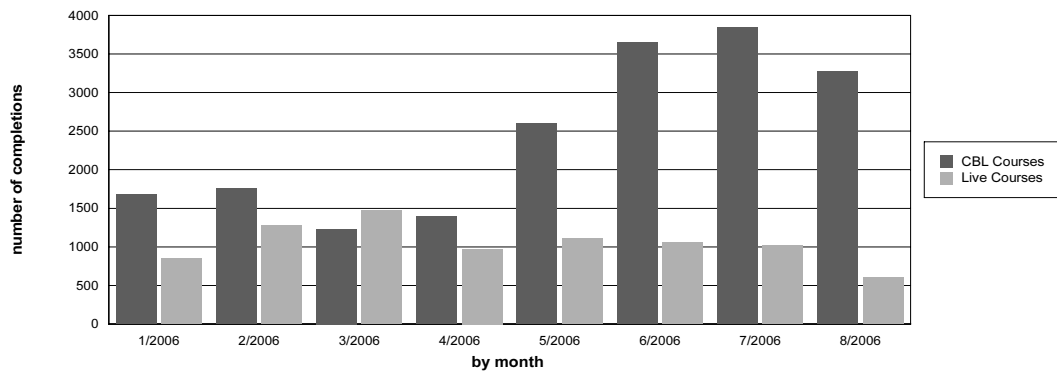


Figure 1. Number of participant course completions for January-August 2006.

**Table 1. Participant Productivity and Cost Savings Going From ILT to Blended**

	Begin Hours	End Hours	Hours Saved	\$ Saved*
NEO Gables	6	2	4	23,400.00
NEO Medical	14	6	8	180,000.00
PIM	21	12	9	27,000.00
Total saved in 2006				230,400.00

\*Annual savings assuming 415.00 per hour/person.

educated decision on what they needed and why.

The fourth step was to set standards and model innovation behavior. PDTO promoted blended, adult learning, and distance education principles through different initiatives. Instructor-led training (ILT) offerings were redesigned and converted to modules, using learning objects with one or several online components. PDTO implemented these principles in high visibility projects like New Employee and Hospital Orientation. The collection of data and feedback from those projects were encouraging to other stakeholders, who started creating online modules to ease their training schedule and provide learners with 24/7 access to online tutorials and help. PDTO instituted standards and guidelines to direct the department and stakeholders on what needed to be done during and after the implementation. Migrating from a pure instructor-led envi-

ronment required different skill sets and different processes. A road map was created that included the process for diffusion, communication, and engagement of those who were responsible for training functions within the University and would benefit and be impacted by the implementation of a LMS.

The fifth step was to get lateral buy in as well as from leadership. The support arose from data gathering and collection. Charts like Figure 1 showed leadership that employees wanted to participate in professional development activities and would do so if available to them when and how they needed it. The resulting savings as illustrated in Table 1 and change in performance help solidify the support. The Professional Development Council (PDC) was created in 2005 to promote adult learning principles, standards, benefits and best practices of eLearning among those with a training responsibility at the University of



Miami. The PDC became a learning platform and a collaboration effort that helped identify business requirements and the need for a new system. Most PDC members were also NetLearning administrators that although using the system for online training, were nevertheless, refusing to offer the bulk of its instructor-led courses in the systems due to the effort needed to setup and complete those classes. Their input later became an integral part in identifying the requirements for a new LMS.

The sixth step was to partner with designers and subject matter experts (SMEs). PDTO partnered with different designers and SMEs to create CBLs that supported good instructional design methodology. These CBLs became beacons of what good e-learning could and should be like. These pilot programs helped gradually promote the desire among different stakeholders of acquiring the necessary skills to produce effective training and use different technologies. PDTO's strategy included developing a competency-based program for training practitioners that provide opportunities for skill gap analysis and training in different areas of instructional design, adult learning, and distance education principles and methodologies.

### **BLENDING BUSINESS REQUIREMENTS AND BEST PRACTICES IN ONE LMS**

As learners became more sophisticated, they started demanding different things from the system. The growth of the university demanded that training be delivered to employees who were not physically located on campus, and were located in satellite offices across Florida as well as worldwide. Learners started questioning the value of long instructor-led sessions. The support for a blended approach that promoted learning and maximized learners' and the organization's time grew. To address that need, PDTO introduced the university community to synchronous virtual training sessions. Elluminate (an

application that provides a synchronous virtual environment) was used for feedback sessions and to allow those in remote locations to participate in training sessions that otherwise would not be available to them. As tools were added to increase interactivity and support distance learning, NetLearning's inefficiencies and lack of scalability became more pronounced.

PDTO started collecting more data to promote the buy in of senior leadership for a new LMS. Focus groups and surveys conducted between the PDC, system users, and NetLearning administrators identified the features needed to accommodate the growing business and learning needs of the university community. These features were compiled into a requirement list used to research and select a new LMS. These groups participated in the final decision process and provided the necessary comments and feedback to support a change in system. They were part of PDTO's strategy for change since NetLearning's implementation and now became vital partners in the search for a viable solution. These groups understood the vision and the business requirements that the replacement system would need to meet in order for the initiative to be successful. It was paramount that these users thought not only of their unique requirements, but consider as well the enterprise requirements for the system. PDTO mediated interest groups and was responsible for bringing all requirements under one banner as well as to meet due diligence in researching and implementing a system that met the global needs of the enterprise.

Fifty-six systems were researched using three major areas: functionality, cost, and vendor's responsiveness. From those systems, five were previewed by PDTO's leadership team and two were then selected to be previewed by all major stakeholders. Data collected after the previews and information sessions revealed an overwhelming consensus among the stakeholders on which system to select. It

is important to note that both systems were extremely similar and met 99% of the requirements. This consensus was a strong witness to the success of the change management process initiated by Beckford's leadership in 2004. The group, composed of 50 people, branded the new system as ULearn and participated actively in the communication and diffusion projects implemented to pave the way for the system's implementation on June 1, 2007. They were and still are an integral part of the strategy to manage and support the change management process at the University during the migration period.

### **THE ROAD AHEAD**

Even though NetLearning provided each department in the university with the autonomy to access and maintain its own training records, and met the initial goal set for the effort, ULearn will expand on those achievements to bring professional development at the University to a new level and will provide the tools to support senior's leadership goals for the organization. The eLearning and Professional Development strategy is built on the new system functionality and allows PDTO to create a learning structure that promotes a "learning as needed" environment. NetLearning ensured the accuracy and validity of professional development activities by giving control and oversight to the content experts. ULearn will identify and prioritize key positions for prescriptive learning. It will assess employees and provide them and their managers with a roadmap for skill and competency gaps that is then customized automatically in Individualized Learning Maps within the system. Those learning maps will address the employee's performance gaps, compliance requirements by job role, and learning needs. The system will, furthermore, act as a needs assessment tool that will identify areas needed to be added to training cur-

riculums and course offerings. It will allow training professionals at the university to work with senior teams to support, monitor and measure learning and performance. ULearn will enable managers to fast-track high-performing employees by placing them into the right training, supporting in this way succession planning and promotion tracks. It will create an immersion process for new employees with defined roles and clear expectations that will reduce attrition and place appropriate candidates in the right positions.

Currently, NetLearning allows employees to register for live sessions and access computer-based modules when it is most convenient for them. Employees also benefit by the ability to learn at their own pace and review course material as often as needed and to have access to compliance and regulatory training. ULearn will allow managers to register employees for training and to create development plans as part of their annual performance evaluation review. It will also track progress and correlate training to the job, while at the same time creating the ability to measure the impact and transfer of that same learning on the job. It will monitor compliance data by automatic reporting to supervisors of noncompliance with training requirements. Managers will be able to take accountability for the professional development of their staff, particularly for regulatory legal and safety compliance. It will also enhance the managers' ability to access resources for their employees in order to improve their performance. The system will automatically define and map regulatory compliance training for all employee positions. ULearn will enable professional development activities to become individualized and to be tracked in one central location to support employee development and performance as it places one of the university's greatest assets, the employees, in the forefront, to support the growth and strategic plan of the university.

## **SUMMARY**

The success of the NetLearning implementation and the migration to ULearn were possible because of the strategic vision used to manage the change process. Both events were not the culmination or the final goal, but they were part of a strategic plan for a paradigm shift in professional development at the University of Miami. The lessons learned detail that best practices research, collection of data, and lateral buy in were critical elements in bringing

about and maintaining change. This process showed that change can be initiated and supported at different levels without having to be initiated by senior leadership. The involvement of senior leadership in this process was planned and requested at strategic points during the process to minimize roadblocks. Change was maintained and managed through the involvement, acceptance, and participation of the stakeholders who would benefit and be the most affected by it.

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# e-Training to Communities of Practice as a New Key toward Globalization Strategies Within Venezuelan Companies

**Lili Steiner**

## **INTRODUCTION**

**M**astering global diversity means understanding the differences that exist within countries as well as between them. The most successful business strategies utilize not only a global scope but a depth of

knowledge concerning the various circumstances faced by local customers, employees, and suppliers. Such knowledge is vital for individual managers who are selling their services and/or products in foreign markets.

E-learning, e-training, and distance education are all terms that define the possibility of training people in different places asynchronously or synchronously. Historically, this strategy has been implemented by the military, according to Simonson, Smaldino, Albright, and Zvacek (2006). Much of this has been made possible because of the concept of distance education, which is the bringing together of learners and the content of instruction no matter where it's located—interactively, in real time, on demand, learner-centred, authentic, and learner-constructed events that characterize the educational environment of the future. The distance factor will be replaced by interaction.

In Latin America, specifically in Venezuela, the concept of e-training within the corporate world is ambiguous; and, as such, the design and implementation of distance education strategies have not



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been included as part of an expansion or globalization initiative.

Venezuela, as stated by Morrison and Conaway (2007), shares with its Caribbean neighbors, as it has with Latin America, the display of a Caribbean easy-going informality. Riera (2007) maintained that the status of e-training or, in more general terms, that the inclusion of technologies of communications, were: "Here we state, colloquially, that the knowing how is worth gold; but, the knowing who has no price." That's why we can see that in theory there are plans for training that never see the light of day because its approach is not sufficiently personalized.

Riera (2007) stated in the interview as an example that in

Europe and in the United States, the initial contact between the franchise entity and potential candidates is completed by means of a series of very scientific instruments of valuation called the franchise request. Candidates fill in their personal information; software will process it and will forward the scores so that headquarters may review the relevance of interviewing each candidate based on their results. This is a standard, and it is part of their system. This is being repeated both in Europe and in the United States, such that both parties only need to meet at the signing of the contract. That is why we can understand the success of distance education, and it is all part of a well-oiled system. As an anecdote, when we first started with these evaluation instruments, we tried to insert and tropicalize technologies of training. We sent the results of a scoring test for a certain franchise. However, one of the candidates had a very low score. During the interview which, by the way, started out on the wrong foot, where the franchise holder mistreated the candidate until he found out that they both came from the same town, went to the same school, and shared common professors and friends. As you can imagine ... they signed the contract.

Riera (2007) concludes that

obviously, there are external variables which are not contemplated within the scientific profiling system we used, and that brings peace of mind for the franchise holder where he "feels" that as an acquaintance "I can control him, since he comes from a family I've met..." Again, it is the knowing who which prevails in regard to the know how.

This is not surprising; books ranging from global diversity to franchises' initiatives fail to describe how expanding companies should plan to train accordingly local franchisees and limit themselves to assert that they need to develop an operations manual.

Communities of practice provide technological opportunities, at very low cost, to design and implement virtual and dynamic procedure manuals, which implies that it has the advantage of traditional manuals. That is, it inherits the benefits and minimizes the glitches so that it can create a productive and nourishing interchange environment and a corporate memory bank.

## A BRIEF HISTORY

Most Latin American countries are working to reactivate their economies as a result of the structural adjustment crisis. In light of growing economic globalization, several of them have been opening up their economies to world markets. At the same time, enterprises are beginning to be recognized as the basic unit on which economic recovery rests. It is through their success that goods and services will become competitive in internal markets and international trade, that new jobs will be created, and resources and income tax will be generated for financing national development (Ducci, 1997).

In Venezuela, on the other hand, there has been a reversal in trend as compared with the rest of Latin America. With the

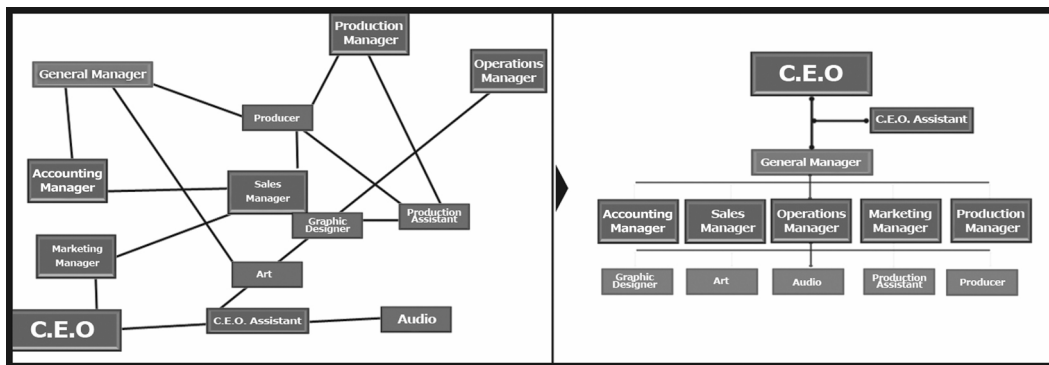


Figure 1.

recurrence of nationalizations, transnational companies are terminating operations locally due to insufficient economic or fiscal guarantees. Consequently, the rates of new entrepreneurship are directed toward small- or medium-sized initiatives in addition to the internationalization of their products and services.

In all cases, Ducci (1997) stated that to place exports successfully in the world markets, some economic sectors and enterprises of various sizes require new kinds of training and development assistance. In this new situation, the purpose of national vocational training authorities (VTAs) is expanding beyond training workers. They are moving toward strengthening a new culture of production based on increased productivity, quality, and cost-effectiveness. VTAs are seeking to provide labor with a greater commitment to economic goals and to develop a workforce with greater possibilities for personal fulfilment and social benefit.

According to Brown and Duguid (1991) ethnographic studies of workplace practices indicate that the ways people actually work usually differ fundamentally from the ways organizations describe that same occupation in manuals, training programs, organizational charts, and job descriptions (see Figure 1). Nevertheless, organizations tend to rely on the latter in their attempts to understand and improve work practice.

This article examines one such study, then relates its conclusions to compatible investigations of learning and of innovation to argue that conventional descriptions of jobs mask not only the ways people work, but also significant learning and innovation generated in the informal communities of practice in which they work.

Much conventional learning theory, including that implicit in most training courses, tends to endorse the valuation of abstract knowledge over actual practice and, as a result, to separate learning from working and, more significantly, learners from workers. Together Lave and Wenger's (1990) analysis and Orr's empirical investigation indicate that this knowledge-practice separation is unsound, both in theory and in practice.

Learning theorists (e.g., Lave & Wenger, 1990) have rejected transfer models, which isolate knowledge from practice, and developed a view of learning as social construction, putting knowledge back into the contexts in which it has meaning (Brown, Collins, & Duguid, 1989; Brown & Duguid, 1991). From this perspective, Brown and Duguid (1991) deduced that learners can in one way or another be seen to construct their understanding out of a wide range of materials that include ambient, social, and physical circumstances; and the histories and social relations of the people involved.

According to Fournies (1999), the three main reasons employees don't know what they need to know (and don't do what they are supposed to do) are:

1. Managers assume employees know what they need to know.
2. Managers really believe they are teaching when in fact they are only telling.
3. Managers decide not to waste the time needed for teaching (p. 15).

On the other hand, from personal experience, the author has found that it is difficult for people to transfer newly acquired knowledge or skills if there is not enough social construct and a place where to apply it. Brown and Duguid (1991) expressed that workplace learning is best understood, then, in terms of the communities being formed or joined and personal identities being changed. The central issue in learning is becoming a practitioner, not learning about practice. According to Brown and Duguid (1991) work practice and learning need to be understood not in terms of the groups that are ordained (e.g. "task forces" or "trainees"), but in terms of the communities that emerge, because the latter description will not provide a clear picture of how work or learning is actually organized and accomplished. It will only reflect the dominant assumptions of the organizational core.

## **COMMUNITY OF PRACTICE DEFINITIONS**

The term was first used in 1991 by Jean Lave and Etienne Wenger, who used it in relation to situated learning as part of an attempt to "rethink learning" at the Institute for Research on Learning. In 1998, the theorist Wenger extended the concept and applied it to other contexts, including organizational settings. More recently, communities of practice have become associated with knowledge management, as people have begun to see them as ways of

developing social capital, nurturing new knowledge, stimulating innovation, or sharing existing tacit knowledge within an organization. It is now an accepted part of organizational development.

Wenger (1998) described CoPs in terms of the interplay of four fundamental dualities: participation vs. reification, designed vs. emergent, identification vs. negotiability and local vs. global although, possibly because of the possible link to knowledge management, the participation vs. reification duality has been the focus of most interest.

Wenger (1998) describes the "negotiation of meaning" as how we experience the world and our engagement in it as meaningful. If all change involves a process of learning, then effective change processes consciously facilitate negotiation of meaning. In his model that negotiation consists of two interrelated components: reification and participation.

Wenger (1998) describes the process of reification as central to every practice. It involves taking that which is abstract and turning it into a "congealed" form, represented, for example, in documents and symbols. Reification is essential for preventing fluid and informal group activity from getting in the way of coordination and mutual understanding. Reification on its own, and insufficiently supported, is not able to support the learning process.

But the power of reification—its succinctness, its portability, its potential physical presence, its focusing effect—is also its danger.... Procedures can hide broader meanings in blind sequences of operations. And the knowledge of a formula can lead to the illusion that one fully understands the processes it describes. (Wenger, 1998, p. 61)

Participation, the second element in the negotiation of meaning, requires active involvement in social processes. Wenger (1998) describes participation as essential for getting around the potential stiffness

(or, alternatively, the ambiguity) of reification.

If we believe that people in organizations contribute to organizational goals by participating inventively in practices that can never be fully captured by institutionalized processes ... we will have to value the work of community building and make sure that participants have access to the resources necessary to learn what they need to learn in order to take actions and make decisions that fully engage their own knowledge ability. (Wenger, 1998, p. 10)

Crucially, Wenger describes the relationship between reification and participation as a dialectical one: neither element can be considered in isolation if the learning/change process is to be helpfully understood:

Explicit knowledge is ... not freed from the tacit. Formal processes are not freed from the informal. In fact, in terms of meaningfulness, the opposite is more likely.... In general, viewed as reification, a more abstract formulation will require more intense and specific participation to remain meaningful, not less. (Wenger, 1998, p. 67)

Wenger calls the successful interaction of reification and participation the "alignment" of individuals with the communal learning task. Alignment requires the ability to coordinate perspectives and actions in order to direct energies to a common purpose. The challenge of alignment, Wenger suggests, is to connect local efforts to broader styles and discourses in ways that allow learners to invest their energy in them:

Alignment requires specific forms of participation and reification to support the required coordination.... With insufficient participation, our relations to broader enterprises tend to remain literal and procedural: our coordination tends to be based on compliance rather than

participation in meaning.... With insufficient reification, coordination across time and space may depend too much on the partiality of specific participants, or it may simply be too vague, illusory or contentious to create alignment. (Wenger, 1998, p. 187)

To the extent that a deep conceptual change involves importing practices and perspectives from one community of practice into another, such change involves what Wenger calls "boundary encounters." Such encounters change the way each community defines its own identity and practice. Crucial to the success of the boundary encounter is the role of highly skilled "brokers" who straddle different communities of practice and facilitate the exchange process:

The job of brokering is complex. It involves processes of translation, coordination and alignment between perspectives. It requires enough legitimacy to influence the development of a practice, mobilize attention and address conflicting interests. It also requires the ability to link practices by facilitating transactions between them, and to cause learning by introducing into a practice elements of another. Toward this end, brokering provides a participative connection—not because reification is not involved, but because what brokers press into service to connect practices is their experience of multi-membership and the possibilities for negotiation inherent in participation. (Wenger, 1998, p. 109)

## **DIFFERENCE BETWEEN COMMUNITIES OF PRACTICE AND TEAMS**

The distinction between communities and teams sometimes leads to confusion. Storck and Hill (2000) suggest that the differences between the two constructs can be characterized as follows: team relationships are established when the organization assigns people to be team members. Community relationships are formed around practice. Similarly, authority relationships within the



team are organizationally determined. Authority relationships in a community of practice emerge through interaction around expertise. Teams have goals, which are often established by people not on the team. Communities are only responsible to their members. Teams rely on work and reporting processes that are organizationally defined. Communities develop their own processes.

Attempts to introduce “teams” and “work groups” into the workplace to enhance learning or work practice are often based on an assumption that without impetus from above, an organization's members configure themselves as individuals. In fact, as Brown and Duguid (1991) suggest, people work and learn collaboratively, and vital interstitial communities are continually being formed and reformed. The reorganization of the workplace into canonical groups can wittingly or unwittingly disrupt these highly functional non-canonical—and therefore often invisible—communities.

In some organizations, according to Lesser and Storck (2001), the communities themselves are becoming recognized as valuable organizational assets. Acknowledging that communities of practice affect performance is important, in part, because of their potential to overcome the inherent problems of a slow-moving traditional hierarchy in a fast-moving virtual economy. Communities also appear to be an effective way for organizations to handle unstructured problems and to share knowledge outside of the traditional structural boundaries. In addition, the community concept is acknowledged by a means of developing and maintaining long-term organizational memory.

### **COMMUNITIES OF PRACTICE IN TERMS OF SOCIAL CAPITAL**

Nahapiet and Ghoshal (1998 as stated in Lesser & Storck, 2001) define social capital, which applies to communities of practice as “the sum of the actual and potential

resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (p. 252). Furthermore, they express social capital in terms of three primary dimensions:

1. There must be a series of connections that individuals have to others. In other words, individuals must perceive themselves to be part of a network (the structural dimension).
2. A sense of trust must be developed across these connections (one aspect of the relational dimension).
3. The members of the network must have a common interest or share a common understanding of issues facing the organization (the cognitive dimension).

This social capital, in turn, creates an environment in which business performance is positively affected. Figure 2 illustrates this process and demonstrates how the three dimensions of social capital provide a window into how communities create value.

## **DIMENSIONS OF SOCIAL CAPITAL**

### **STRUCTURAL DIMENSION**

Fundamentally, the structural dimension of social capital refers to the ability of individuals to make connections to others within an organization. These connections, as Nahapiet and Ghoshal (1998) wrote, “constitute information channels that reduce the amount of time and investment required to gather information” (p. 252).

One technique that was recommended by Lesser and Storck (2001) to build ties between previously disconnected employees was the use of face-to-face meetings. In some situations, such as in the project manager and the software developer communities they examined, a kickoff meeting served as an initial venue to bring together

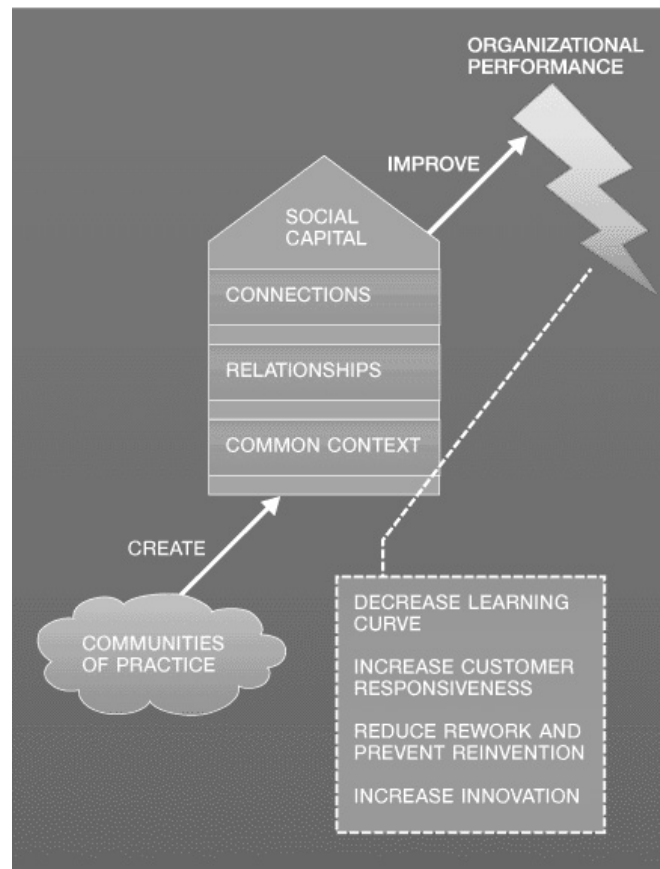


Figure 2. Communities of practice are linked to organizational performance through the dimensions of social capital.

similar individuals who were unfamiliar with one another.

### RELATIONAL DIMENSION

Making connections through networking is one important component of building social capital. Another is the development of the interpersonal relationships that reinforce these initial connections between individuals. Nahapiet and Ghoshal (1998) suggest that there are four components to this relational dimension: obligations, norms, trust, and identification.

Obligations refer to a sense of mutual reciprocity; for example, the willingness to return a favor with a favor. Norms include the setting of common standards of behavior that individuals are willing to abide by. Trust involves the predictability of another person's actions in a given situation, whereas identification refers to the process whereby individuals see themselves as united with another person or set of individuals.

Another factor that reinforced trust was the development of shared repositories and discussion databases that were actively managed by the community. In these shared spaces, individuals began to evaluate who was making contributions to the greater community knowledge pool, and they began to judge the willingness of others to share the documents, templates, and other similar knowledge artifacts

### COGNITIVE DIMENSION

In addition to connections and trust, the third important dimension of social capital is the development of shared context between two parties. As described by Nahapiet and Ghoshal (1998), "To the extent that people share a common language, this facilitates their ability to gain access to people and their information. To the extent that their language and codes are different, this keeps people apart and restricts their access" (p. 253).

### LINKING COMMUNITIES OF PRACTICE WITH ORGANIZATIONAL PERFORMANCE

Hess (2007) concluded that companies that grow from within have six key elements.

The most relevant for this discussion, is that they "build an engaged, loyal and multitalented people pipeline" (p. 22).

Hess (2007) implied that employees doing the work know and understand the business and the importance of their individual jobs. Their success will be measured by what is important to the success of the business.

Vainrub (2007) shared during his interview an important insight, that

as difficult the operation is, maybe training is of less need, while simpler the operation more training is of need.

During his interview, Vainrub (2007) continued by stating that locally, training is a politically good word, nobody will publicly state the contrary. It is not politically correct to do so.

A larger corporation would invest maybe, between 1 and 2% of their net turnover, on training on a broader sense. I wouldn't think that smaller to mid-sized companies will separate a specific amount from their budget for training purposes. In these cases, there is no stating that "I will invest 1, 2 or one and a half percent of my revenues for training. Small companies are more oriented to survival maybe, to positive cash flow, so it is much easier to forgo training. It is shortsighted but it is easier to cut in advertising, in training than in other areas.

With this local reality, there is an emerging need, on the other hand, to create alternative strategies that can promote updated and centralized information for relevant employees, which coincides with part of what Lesser and Storck (2001) learned through their research, based on suggestions made by the community members of different mechanisms in which communities of practice influenced business outcomes.

Although many of these were tied to the specific business environment that each of the communities operated within, their

analysis highlighted four areas of organizational performance that were impacted by the ongoing activities of communities of practice:

1. Decreasing the learning curve of new employees. Lesser and Storck (2001) stated accordingly that communities of practice were quite valuable in helping newcomers identify subject matter experts who could answer questions and guide them to resources within the organization. Within a community of practice, new employees were able to make the connections that allowed them to identify a number of people with the same or similar work activities and answer questions about their new position.
2. Responding more rapidly to customer needs and inquiries. In an era when both prospective and existing customers expect rapid answers to inquiries, communities of practice can play an important role in quickly transferring the knowledge necessary to address customer issues. Lesser and Storck (2001) clarified that, from a connection perspective, communities can help individuals rapidly identify an individual with the subject matter expertise necessary to provide the best answer to a client problem. This is especially true in organizations in which the expertise needed to solve a particular client problem may be separated by time zones, distance, and/or organizational boundaries. Lesser and Storck (2001) stated that, as many communities maintained some form of centralized electronic repository, the reuse of intellectual capital located in a common location made it easier to find valuable explicit knowledge that could be used to respond to a customer need.
3. Reducing rework and preventing "reinvention of the wheel." Lesser and Storck (2001) consider that the most valuable contribution that communi-

ties of practice can make to a sponsoring organization is the ability for members to more easily reuse existing knowledge assets. Given the aging of the workforce and the increased worker mobility that has been witnessed within the United States over the last several years, the need to retain "organizational memory" has become ever more important.

4. Spawning new ideas for products and services. In several of the companies that Lesser and Storck (2001) examined, the communities of practice served as breeding grounds for innovation. These communities provided a forum in which individuals were able to share a variety of perspectives around a common topic.

Lesser and Storck (2001) concluded that one of the primary reasons that communities were seen as an important vehicle for innovating was their ability to create a safe environment where people felt comfortable in sharing challenges. The development of these interpersonal relationships within the community was especially useful in asking sensitive questions or testing ideas that were not fully "baked." In many of the companies that they examined, the ability of individuals to use other community members as a sounding board was a highly valued feature of community life. In these situations, individuals were willing to share innovative thoughts with those whom they trusted, yet were also able to tap their expertise to refine and explore these new ideas.

## **STRUCTURES THAT SUSTAIN COMMUNITIES OF PRACTICE**

Millen and Muller (2001) found some similarities between the structures of association communities of practice studied by Miller and Costanzo (as stated by Muller & Carey, 2002), and the particular company

community of practice studied by Muller and Carey (2002):

1. One large community of practice was composed of formal (conference, speaker series, group meetings) and informal (chapter, prior coassignment) physical sites of interaction.
2. Formal (distribution lists) and informal (online discussions and instant messages) virtual sites of interaction.
3. Varied participation in each venue.
4. Potentially different roles in each venue. The care and feeding of a community of practice requires the help of many individuals performing a variety of roles.

Several studies have identified various roles that appear to be important in nurturing a community of practice. In a study of 13 organizations in six industries, researchers identified three main roles: stewards, who capture and codify tacit knowledge; researchers, who search, retrieve, and deliver knowledge; and brokers, who connect knowledge seekers with sources (Horvath, Sasson, Sharon, & Parker, 2000).

McDermott (2001) identified five "leadership roles": community leader, thought leader (technical "guru"), knowledge miner, subject matter expert, and core group member. Fontaine (2001) described ten roles, including leader, sponsor, facilitator, content coordinator, subject matter expert, and several categories of members. Kim (2000) identified seven important roles, including hosts, who keep community activities running smoothly; greeters, who welcome new members; and event coordinators, who plan and run major or recurring events. Muller (2000), in a study of secondary sources from 20 corporate knowledge organizations, found evidence for roles of gatekeepers (looking inside the organization and looking outside the organization), authorities (people who reviewed and vetted knowledge before

distributing it to organizations), lay knowledge originators, and knowledge users.

Millen and Muller (2001) discerned that roles in association-based communities of practice appear to depend upon the venue of interaction (e.g., physical vs. virtual). Here are two relatively obvious examples: association officers tend to be more powerful in face-to-face meetings; webmasters or discussion-group moderators tend to be more powerful in online settings. However, this simple differentiation is actually more complicated, for several reasons:

1. There is often explicit reference made from physical to virtual, and back.
2. There are specialized online discussion groups in which rank in the organization does matter.
3. There are face-to-face events at conferences which are organized and chaired by discussion-group moderators.
4. Fontaine (2001) established that several roles in communities of practice appear to be nearly universal:
5. A mediator-authority who interprets knowledge (and, sometimes, knowledge structures such as taxonomies) to other community members.
6. An expert with the responsibility to identify, categorize, and reify those items that the organization treats as knowledge.
7. "Consumers" or "users" of the community knowledge, who may or may not themselves contribute directly to that knowledge (note that there are powerful arguments regarding the valuable roles that are played by "peripheral" or "nonpublic" participants—respectively (Lave & Wenger, 1991; McDermott, 2001; Nonnecke & Preece, 2000))
8. Some communities may officially recognize additional, less information-centric roles, such as leader, greeter, host, and facilitator (Kim, 2000; McDermott, 2001). Other communities may treat these roles more implicitly.

## **BENEFITS AND COSTS ASSOCIATED WITH COMMUNITIES OF PRACTICE**

Millen, Fontaine, and Muller (2002) explored the benefits and costs of communities of practice within large, geographically dispersed organizations and discussed the challenges inherent in justifying the corporate investment in such communities. They based their report on five dimensions of communities of practice: development path, membership, activities, organizational support, and value. According to Millen, Fontaine, and Muller (2002) the final two serve as relevant input for this research.

### **ORGANIZATIONAL SUPPORT**

Millen, Fontaine, and Muller (2002) revealed three distinct categories of community benefits: individual, community, and organizational. Individual benefits spanned many topic areas, including improved reputation, a better understanding of what others were doing in the organization, and increased levels of trust. The familiar and supportive environment found in many communities of practice encourage member interaction and ongoing professional development and learning about new tools, methods, and procedures. Study participants expressed the benefits of increased access to subject-matter experts and valuable information resources. Together, these benefits allowed members to develop professionally, remain at the forefront of their discipline, and gain confidence in their own expertise.

Community benefits included increased idea creation, increased quality of knowledge and advice, problem solving, and creating a common context. Communities provide a forum for the free expression of creativity and new ideas, providing members with the opportunity to share ideas and think outside of the box. The more compelling evidence of community benefits for the organization was in the area of time saving.

## **ASSOCIATED COSTS OF A COMMUNITY OF PRACTICE**

According to Millen, Fontaine, and Muller (2002) incurred costs in launching and supporting a community of practice (CoP) include four major categories of cost drivers: costs of participation time for community members, meeting and conference expenses, technology, and content publishing and promotional expenses.

Specifically, the costs of participation included the salaries for members who were identified as supporting the community through eleven identifiable roles (e.g., facilitator, sponsor, journalist). Technology costs included the costs of synchronous and asynchronous group messaging applications and community Web sites. Meeting costs included the expenses associated with face-to-face meetings, including travel expenses, as well as the costs associated with electronic meetings (e.g., teleconferencing). And finally, the cost of publishing content included the cost of online content development and production costs for community newsletters and promotional materials.

To assess whether the cost categories were reasonable and complete, 36 knowledge management professionals divided into teams of six were asked to consider the communities of practice framework in a budget allocation exercise. In this exercise, a case study of a developing community of practice was presented and the teams decided how to allocate financial resources across each of the cost areas. There was remarkable consistency among the responses from the six groups. On average, the groups allocated 52% of the community budget to pay for salaries (and incentives) for community workers. On average, 32% was used to pay for meeting expenses, 10% for technology and 6% for publishing and promotion expenses. The relatively low investment in technology was a bit of a surprise, but may be reasonable given that the exercise assumed that general corporate communication infra-

structure (e.g., telephone and e-mail), was available to the community at no additional expense.

## CONCLUSIONS

Even though communities of practice have been successfully applied in developed countries, the concept is still considered to be a theoretical framework in the cultural structure of emerging markets. There is no doubt that these communities could be implemented in pilot programs at companies that are opinion leaders within their specialty. This introductory strategy should use diffusion of innovations theory in order to gain momentum, and this approach could convert itself into a market standard.

Cost and cultural issues pose no real obstacles to this initiative. Furthermore, communities of practice as a dynamic operations manual could be considered a twofold solution for legal and systems issues. Legal issues such as having all necessary requirements and operations described "in black and white," and at the same time, being dynamically updated to better reflect the company's evolution.

The systemic aspect of the communities of practice, according to McDermott (2001) is that it has always been part of the informal structure of organizations. Communities of practice are organic. They grow and thrive as their focus and dynamics engage community members. But to make them really valuable, inclusive, and vibrant, they need to be nurtured, cared for, and legitimated. They need a very human touch. As leaders, organizational designers and support staff have little experience in how to develop this sort of organic organizational element. Too much support and they lose their appeal to community members, too little and they wither.

Schwier, Campbel, and Kenny (2004) stated that context, content, and people are vital for virtual communities. Content provides the substance around which

discussions form; however, in virtual communities, it appears that participants are looking for more. They are looking for a context that is convenient to use, and they are looking to expand the number of qualified people they can engage, or access to leaders in the field who are otherwise inaccessible. This trinity forms much of the social capital of virtual communities, the glue that holds them together.

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# Quality in Distance Learning

**Michael Corry**

**D**ue to the extreme popularity of distance learning, online learners can choose from a wide variety of options. They can take online courses to earn a new degree or complete a partially finished one. They can take courses to learn a new skill. They can take courses because their job mandates that they do. Or they can take courses just for the fun of

learning something new. Online courses are being offered by accredited universities, corporations, nonprofit organizations, nonaccredited institutions, governments, and many others. Courses can be completely asynchronous, synchronous, a combination of the two, or a combination of face to face and at a distance.

With all of these options available, sometimes it is hard for individual online learners to decide what is best for them. To help with that dilemma, one of the most important things to consider is the quality of the course or program of courses. When looking for quality in online education, there are many things to consider.

## **COURSE DESIGN**

When considering whether a particular online course is right for you, it is important to consider the course design or layout. When designing an online course, the course designer should follow an instructional design methodology. The course should not simply be course notes converted into a Web page.

High-quality online courses need a layout that makes sense. Luckily, many online course management systems like Blackboard, eCollege, or Moodle are being used today. These systems help the course



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designer put together a course with a consistent design and navigation. The use of a course management system does not guarantee that a course will be high quality, but it is a good sign.

If you are taking multiple courses from the same provider, it is always good if the course layout and navigation is similar between courses. Therefore, the learner needs to learn the navigation system once and can carry that knowledge forward to other courses. If the layout is different for each course, the student will need to learn something different for each course. This is a barrier to learning that can simply be eliminated with a good course design.

## **COURSE CONTENT**

At first thought, most people would probably say that course content is the single most important factor in the quality of a course. They are probably right. Even though there are many other important things to consider when designing a quality course, content is at the top of the list. How can you tell if the content is high quality or not?

One of the first things to consider is how up-to-date the materials are. Depending on the topic, the timeliness of the course material can vary. For example, if you are studying classic literature, then *Romeo and Juliet* is written the same today as it was written by Shakespeare in the 1500s. However, if you are learning about how to create a Web page, course materials developed 5 years ago may be out of date. Therefore, when considering the timeliness of the course materials, keep in mind the course topic. Because of the wide variety of topics being offered, the individual online learner will need to be the judge of the currency of the course materials.

Another item to consider when examining course content is the external links within the course. Since many online courses link to outside resources, if several of those links are broken or not working,

that is a sign that the course has not been recently updated. A high-quality course will have few, if any, broken external links.

Also, under the course content umbrella falls the type of instructional activities that take place. It is important to examine the items that make up the course. For example, if the course is simply made up of written notes for the learner to read and a test at the end of the course, then most learners would say the quality is fairly low.

High-quality courses make use of the tools available and use them appropriately. The old saying "a picture is worth a thousand words" can sometimes be true in online course materials. For example, if the course is teaching something that requires a picture or video to assist in the learning process, then a higher-quality course would contain the picture or video. A lower-quality course would simply discuss it with written materials.

This doesn't mean that a course filled with video is the highest-quality course. In fact, if too much video is used, it can detract from the course. The key is using the right tools (video, in this case) at the right time.

Another key course content area is interaction. Interaction can occur between the instructor and learners, among the learners, or between the computer and the learner. Distance learners crave interaction. Higher-quality courses offer the opportunity for the learner to interact. The interaction results in increased involvement in the course, including online discussions and social presence (Tu & Corry, 2003).

## **COURSE INSTRUCTOR**

As with courses taught in any format, the course instructor plays a major role in the quality of the course. Therefore, the first thing to consider is who is teaching the course. It is someone who is well known in the field? Is it an adjunct or a full-time professor? Has he or she taught online before? If so, how long? The

answers to each of these questions are important to the quality of the course. If you take an online course from someone who has never taught online, the odds are that the quality will be lower as they “learn the ropes” of distance education. If you take a course from someone who has never taught the topic before, again the course quality probably will be lower than if you take it from someone who has taught it many times.

It is not uncommon to find out that online course content was developed by someone other than the course instructor. That may or may not cause problems for the online learner. The key is whether the instructor understands the course design and content. If the instructor is teaching course content developed by someone else for the first time, there is bound to be bumps along the way.

## **SUPPORT**

Support for online learning is many times an afterthought. That is unfortunate, because support is one of the keys to a high-quality distance learning experience. Support can come in three main areas. The first is academic support. This support is typically offered by the course instructor or instructional assistant. This consists of answering questions about course content and assignments. Not only is the type of feedback important, but also the timeliness. If a learner gets an answer to a question two weeks after he or she asked the question, then the quality is fairly low. The same holds true about feedback on assignments. If feedback is consistently late, then students lose the opportunity to learn from their mistakes and apply that learning later in the course.

The second type of support is administrative in nature. Since many distance learners are separated by distance from the entity offering the course, they sometimes have unique needs that are more difficult to address without a helping hand. That

helping hand is in the form of administrative support. For example, if face-to-face learners needed help with financial aid forms, they would simply walk to the financial aid office and sit down with a representative. If distance learners need the same help and they live 2000 miles away from campus, they can be greatly benefited if they have a local contact who is trained to work with distance learners. The same can be true when dealing with ordering books, registering for classes, advising on course selection, graduation, etc. Therefore, when looking for a high quality distance learning course or program of courses, it is important to have trained administrative support available.

The third area of support is technical support. There is nothing more frustrating to distance learners than when they are experiencing technical difficulties with the course. It would be similar to a face-to-face student being locked out of a classroom. In accordance with the other two forms of support, not only is the availability of technical support important, but also the timeliness of their response. If distance learners have to wait long periods of time for technical support, they will become very frustrated. Lastly, when considering technical support it is important to understand the scope of the support. Does the technical support team have the capacity to simply reset a password, or can they delve deeper into more complex issues?

## **SUMMARY**

In summary, not all distance education is created equal. There is a quality spectrum where each course falls. As distance learning becomes more popular and more offerings are available, learners need to consider several items when seeking a high-quality course. Four areas of key importance are course design, course content, course instructor and support. As distance learners carefully consider each of these areas, they will be better-informed

consumers and have a higher-quality learning experience.

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# If e-Learning is the Solution, What is the Problem?

**Ryan Watkins**

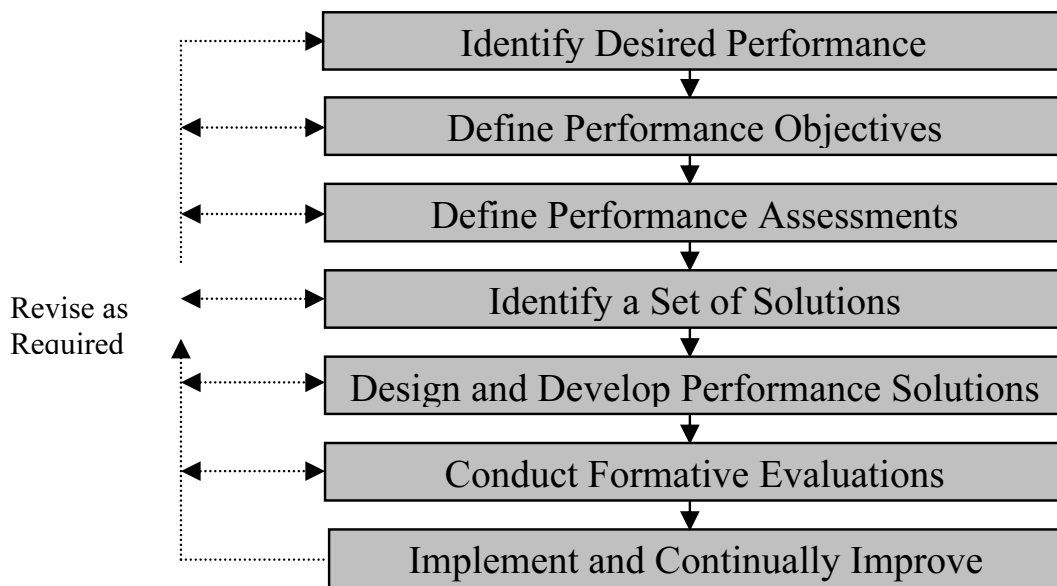
**E**-learning has become a common tool for improving individual performance in today's organizations and institutions. Improving the performance of people is, after all, a worthy ambition, and learning is a frequent contributor to success. But the path from the

ambition of improving performance to the accomplishment of useful results can be a difficult one. From e-learning to mentoring and from traditional training to employee retention, improving performance almost always requires more than just one improvement activity. As a consequence, we should view e-learning as just one potential component of any effort to improve either individual or organizational performance.

While visions, missions, and strategic plans are valuable and necessary foundations for accomplishing beneficial results, you can only improve performance by selecting, designing, and developing capable activities. Yet, to begin you must know what it is you are trying to accomplish. In other words, you must know the problem if you are going to select, design, and develop solutions that are intended to improve performance. Thus, effective approaches to improving performance don't rely on any specific activity, intervention, or solution to accomplish desired results. As we know, learning activities such as training and e-learning can only address a limited number of issues that lead to less than desirable performance



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Source: Watkins (2007).

Figure 1. A general systematic model for selecting, designing, and developing performance improvement systems.

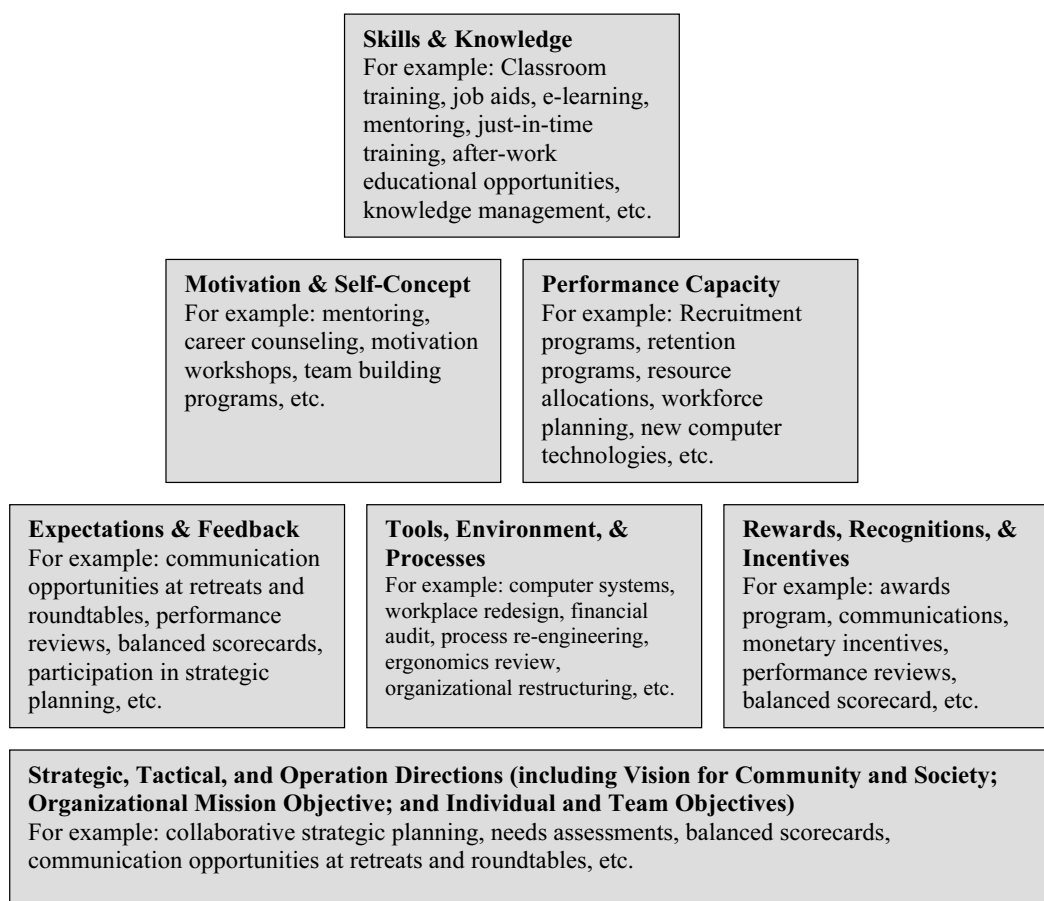
(specifically, issues related to knowledge, skills, attitudes, and abilities). In addition, e-learning activities do not address outdated processes, limited resources, lack of supervisor feedback, poor recruiting, inadequate performance appraisals, or policies that punish desired performance, to name just a few.

Equally, you do not want to rely on a training approach, instructional design approach, an even an e-learning approach to improving performance in your organization. Rather, apply a systematic process for selecting, designing, and developing a system of multiple activities based on their individual and combined abilities to accomplish desired results (see Figure 1).

Using this process, you can assess the capabilities of various potential improvement activities before choosing the right combination for achieving results in your organization. From mentoring programs and leadership seminars to e-learning and electronic performance support, you

should evaluate all of your options rather than sticking to just the ones you know best (see Figure 2 for examples). You can then address complex challenges and opportunities, rather than creating random acts of improvement through quick-fixes. You can even blend activities that individually and collectively to improve performance (such as, mixing career planning, health and wellness programs, and workforce planning; or combining recognition programs, e-learning, job aids, and a performance appraisal system).

As you can see, e-learning alone can rarely address complex performance challenges and achieve sustainable, beneficial results. While e-learning may frequently be part of your improvement plan, you should embed it within a more comprehensive approach that addresses performance problems from multiple perspectives; this allows you to capitalize on the strengths of e-learning, while not depending on it to accomplish everything by itself.



Source: Watkins (2007; based on Wedman & Diggs, 2001).

Figure 2. The performance pyramid with sample performance improvement activities.

Focus first and foremost on the measurable results you want to accomplish and then look at all of your options for implementing useful improvement activities. Use e-learning wisely and it will be a great tool for your improvement efforts.

Wedman, J. F., & Diggs, L. L. (2001). Identifying barriers to technology-enhanced learning environments in teacher education. *Computers in Human Behavior*, 17(4), 421-430.

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organized," "lack of attention" must be replaced by "faculty and student interaction," "insufficient oversight" must be replaced by "highly rigorous," and "rogue" replaced by "exemplary."

The literature of the field gives sufficient guidance for the development of exemplary rather than contaminated courses. For example, a three-credit online course should be designed to expect at a minimum at least 100 hours of effort during the semester by the typical student. Next, rigorous and regular assessment strategies should be used to determine if students are learning. Finally, instructors should be trained to teach at a distance and should

be held accountable for the quality of their courses. Certainly, there are many additional standards and best practices for online courses. These standards and practices should be expected and enforced.

If "to contaminate" is to make impure by contact or association, then the field of distance education must be sure that it does not tolerate contaminated courses. We must enforce standards ourselves, or someone else will. And finally, the athletes were suspended, and their team lost the bowl game.

*Information from ESPN.com and the Associated Press was referred to in this column.*

**A THREE-CREDIT ONLINE COURSE SHOULD BE DESIGNED TO EXPECT A MINIMUM OF 100 HOURS OF EFFORT DURING THE SEMESTER BY A TYPICAL STUDENT.**



# Contaminated Courses

**Michael Simonson**

*"Poorly Structured" ... "lack of attention by faculty" ... "insufficient oversight"  
... "rogue tutor" ... "contaminated online class" ...*

When words such as the ones above are used to describe an online course, the field of distance education suffers immeasurable damage. Unfortunately, these phrases were used to describe an online course at the center of an athletic cheating scandal.

Every sports fan has read the many articles and reports in newspapers, sports

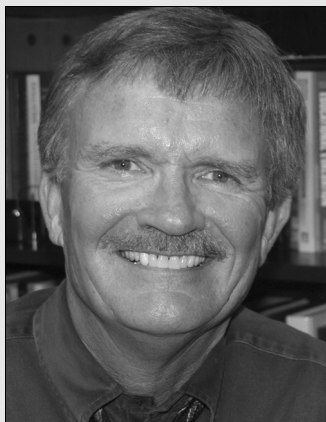
magazines, and online blogs, and heard the dozens of reports on talk shows, half-time reports, and evening news to know that student athletes who were enrolled in an online music history class were found to have cheated with the help of a tutor. The professor in charge of the class has claimed that it was well designed and state of the art.

The issue of athletes and cheating is an important and recurring theme in higher education. What is new is the cheating occurred in an online course—a *contaminated* online class, as Florida State University president T. K. Wetherell labeled it (Associated Press).

While the fact that the music history class was an online course was not at the center of the story, maybe it should have been. Perhaps an investigation of this class needs to be conducted. There are standards for online courses, there are best practices to be followed, and standards and best practices should be enforced. If distance education and online instruction are to remain legitimate and generally accepted, then courses must be outstanding.

Descriptions such as "poorly structured" must be replaced by "excellently

*... continues on page 95*



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